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*****

PAÑCA KARMA THERAPY

(Ancient Classical Concepts, Traditional Practices, Recent Advances and Guidelines of Standard Practice)

REVISED & ENLARGED

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Dedicated

to

the Ayurvedic Practitiones of Kerala
who kept the Art & Science of Panca Karma
Therapy alive in some form and who
continue to inspire rest of the
profession to revive this great science
in its original form.

Key to Indo-Romanic translation

अ	आ	इ	ई	उ	ऊ	ऋ	
a	ā	i	ī	u	ū	ṛ	
ए	ऐ	ओ	औ	अं	अः		
e	ai	o	ou	aṁ	aḥ		
क्	क	ख्	ख	ग्	ग	घ	ङ
k	ka	kh	kha	g	ga	gha	ṅa
च	छ	ज	झ	ञ			
ca	cha	ja	jha	ña			
ट	ठ	ड	ढ	ण			
ṭa	ṭha	ḍa	ḍha	ṇa			
त	थ	द	ध	न			
ta	tha	da	dha	na			
प	फ	ब	भ	म			
pa	pha	ba	bha	ma			
य	र	ल	व	श			
ya	ra	la	va	śa			
ष	स	ह	क्ष	त्र	ज्ञ		
ṣa	sa	ha	kṣa	tra	jña		

FOREWORD

'*Pañcakarma*' (five measures) play a vital role in Ayurvedic therapeutics and as such they occupy an important place in Ayurvedic Medicine. It is not known why the number five was preferred but it is definite that these measures were in vogue in the times of the *Caraka-saṃhitā* (CS). CS begins with the first quadruple on *bheṣaja* (drugs) which is mostly and primarily devoted to the drugs used in *Pañcakarma.* These five measures are *vamana* (emesis), *virecana* (purgation), *nirūha* (non-unctuous enema), *anuvāsana* (unctuous enema) and *nasya* or *śirovirecana* (head evacuation). Some take *nirūha* and *anuvāsana* under *basti* and complete the number (five) by adding *raktamokṣaṇa* (blood-letting).

Why only these five are designated as *'karma'* when there are a number of other remedial measures? This point has been discussed by Cakrapāṇidatta (CD) at length. He says that here *'karma'* denotes extensive management and pronounced potency for elimination of impurities (बह्वितिकर्त्तव्यतायोगिदोषनिर्हरणशक्तिज्यायस्तवम्). *Sneha, sveda* and collyrium etc. are not covered by this definition and as such are not included in it. Moreover, now the term has been restricted to the five evacuative measures (CS. SŪ. 2.15).

Cikitsā is broadly classified into two : *'śodhana'* (evacuatory or eliminatory) and *śamana* (pacificatory). Here also *śodhana* occupies the first place. The question can be raised why so much importance to *śodhana Cikitsā* of which *Pañca Karmas* are the important means? The importance of *Pañcakarma* in Āyurveda is testified by the fact that it is essentially applicable to all cases, covering a wide range of preventive, curative and promotive conditions. It is commonly said that as dyeing is not properly effected if the cloth is not properly washed and cleaned the *śamana* therapy does not work well if *śodhana Cikitsā* is not done priorly and thus the ground is not prepared well. Even in *Rasāyana* and *vājīkaraṇa* evacuation of *doṣas* is a pre-condition for their effective application (CS. CI. 1.4.36-37; I.50-51). In

ṛtucaryā (seasonal regimen), elimination of accumulated *doṣas* is prescribed before they are aggravated enough to produce disorders. CS says that accumulation of *doṣas* should be eliminated in the months of *caitra, śrāvaṇa* and *mārgaśirṣa* (in cases of *kapha*, *vāta* and *pitta* respectively) (CS. SŪ. 7.46; also Sa. 2.45). CD has given a long discussion on this elucidating many important points. He has shown that the list of seasons having *prāvṛṭ* replacing *śiśira* is designed particularly for eliminative treatment and not because of the geographical variations as Kāśyapa says. This point has been again discussed in detail in vimānasthāna (8.125-127). There it is said that in *hemanta, griṣma* and *varṣā* cold, heat and rains are pronounced respectively while in between are the three moderate seasons-*vasanta, prāvṛṭ* and *śarad.* It is in the moderate seasons that the eliminative measures are applied in order to avoid complications due to extreme environmental factors.

The other important point to be noted here is that the *doṣas* are eliminated not in the beginning of the aggravating seasons but at the later part. The reason is that the *doṣas* are extracted only when they are fully aggravated and liquified otherwise their elimination is difficult. The underlying point is that the *malas* have natural tendency to get out *(bahirmukha)* and the measures are only to help restore the natural process rather than forcefully driving them out. That is why in *vamana* etc. *utkleśaṇa* (excitation) is a very important prior procedure for success of the therapy. It should always be borne in mind that Āyurveda being a way of nature-cure relies and emphasises on the natural instincts and tendencies which should neither be suppressed nor forced out. In context of the above verse, Bhaṭṭāra Haricandra has a different view and takes *kārttika* instead of *mārgaśirṣa* and so does Vāgbhaṭa. But even then the central concept is not in any way disturbed.

Śodhana is concerned with *malas* while *śamana* deals with *doṣas. Pañcakarma* is meant for elimination of *malas* and as such to understand the role of *Pañcakarma* it is necessary to know the nature and functions of *malas.* The human body is composed of three biological units-*doṣas*, *dhātus* and *malas* (SS, SŪ. 15.3) which maintain the body if they are in the state of equilibrium. In this way, they are all *dhāṭus* as in normal condition

they sustain the body. When food is ingested it undergoes digestion and by the action of *jāṭharāgni* the product is bifurcated into *prasāda* (essence) and *kiṭṭa* or *mala* (excrete) both being *dhātu* (CS. SŪ. 28.4) because of their sustaining character. The word *'mala'* is formed by the verb-root *'Mala dhāraṇe'* which indicates its sustaining character (मलते धारयतीति मल:). In normal state it provides strength. Strength of man depends on *śukra* while life depends on *mala*, thus say Vṛnda and Cakrapāṇidatta (in the ch. *on* Rājayakṣmā). But this function is attributed to it in minimal quantum and what is excess of it should be evacuated properly and regularly. The word *'Kiṭṭa'* which is formed by the verb root *'kiṭ gatau'* denotes its excretable character (केट्यते त्यज्यते इति किट्टम्) otherwise it threatens to cause disorders (किट त्रासने). If it is not excreted properly it accumulates in channels, blocks them and cause disorders. The various types of *srotas* must be clear so as to produce and carry the biological entities. *Haritaki* performs this function excellently and, that is why it is known as *'pathyā'* and the best among *pathyas* (drugs useful for *srotas*). When the residue is to be excreted it is *kiṭṭa* or *mala* (मलिनीकरणान् मला:) and when it is prone to cause disorder it is *doṣa*. Thus *mala* is also *dhātu* and *doṣa* as well in different states. *Doṣa* and *dhātu* too have other two states.

Suśruta defines the general principle of treatment as follows-*doṣas* decreased should be promoted, aggravated ones be pacified, those much advanced should be eliminated and those in normalcy should be preserved as such (SS. Ci. 33.3) Here distinction has been made between *'kupita'* (aggravated) and *vṛddha* (advanced) which have to be treated with pacification and elimination respectively. While explaining this *Ḍalhaṇa* says that *vṛddhi* (increase) of *Doṣas* is of two types-*caya* (accumulation) and *prakopa* (aggravation) characterized by compactness *(Saṃhati)* and *vilayana* (liquification) respectively. It is in the latter state that elimination is prescribed. In fact, the aggravated *doṣas*, after exerting for sometime, become powerless and reduced to the state of *mala* which must be eliminated. Here the word *'vṛddha'* signifies this.

The quantum of *mala* is maintained in equilibrium by *Agni* on one side and excretory activity of vāyu on the other. If *Agni*

acts with proper intensity *prasāda* portion gets the major part in the product while *mala* appears in minor proportion but if *Agni* is deficient it produces less essence and more excrete as in case of *rājayakṣmā* (CS. Ci. 8.41) and also in *udara*. That is why it is said *'Rogāḥ sarve'pi mande'gnou'*. The statement of Vṛddha Vāgbhaṭa (AS. SŪ. I9 16) that by sluggishness of *dhātvagni* decrease of *dhātus* takes place probably relates to *malarūpa dhātu. Mala* is formed as an end product in every type of *Agni* except, of course, *śukrāgni*. These *malas* must be expelled regularly otherwise if they are accumulated they cause disorders. *Malas*, excessively accumulated and excited destroy life (AH. SU. 4.25). *Malasañcaya* is one of the major causes of diseases particularly *udararoga* (CS. Ci. 13.9). Some take *malasañcaya* as *ama* which causes various disorders.

There is another aspect of the problem. According to *svabhāvoparamavāda* (theory of natural cessation) the deranged or morbid *doṣas* or *dhātus* are irreversible to their normal state and as such are thrown out as *mala*. These excretions should be eliminated to prepare the body for the fresh normal series of *dhātus*.

Śodhana strikes at the root of *malas* and eradicates them (तद्धि मूलादुन्मूलयेन् मलान्-AH. SŪ. 8.22) and as such the disorders treated with *saṃśodhana* do not recur while those treated with other methods (*Laṅghana*, *Pācana* ete.) might re-appear (CS. SŪ. 16.20-21).

It would not be out of place to mention about the six therapeutic measures *(ṣaḍupakramas)*. As *Pañcakarmas* are for *śodhana* the *ṣaḍupakramas* are for *śamana*, though there is mention of *saṃśuddhi* under *laṅghana* as it produces *laghutva* (lightness). The *ṣaḍupakramas* have not been interpreted fully by the commentators. In fact, they are related on one side to the six *vīryas* and on the other side to the three *doṣas*. *Laṅghana, bṛṃhaṇa, svedana, stambhana, rūkṣaṇa* and *snehana* are effects of *laghu*, guru, *uṣṇa*, *śīta, rūkṣa* and *snīghdha viryas* respectively. As regards their relation to *doṣas*, two *upakramas* are for each *doṣa* one for increase and the other for decrease such as *bṛṃhaṇa-laṅghana, svedana-stambhana* and *rukṣaṇa-snehana* for *kapha*, *pitta* and *vāta* respectively. This is also indicated by the last verse of the chapter on *laṅghana* and

bṛṃhaṇa (CS. SŪ. 22.43) and explicitly stated elsewhere (CS. Vi. 8.38-त्रिभिर्हेतुभिर्दोषाः प्रकुप्यन्ति, षड्भिरुपक्रमैश्च प्रशाम्यन्ति). *Vāgbhaṭṭa*, however, reduces. them to two : *bṛṃhaṇa* (*santarpaṇa*) and *laṅghana (apatarpaṇa)*. This is based on the two divisions of patients and also of *bhūtas* (*guru* and *laghu*) (AH. SŪ. 14.1-4). This is similar to the categorisation of *vīrya* into two *śīta* and *uṣṇa* according to *Agni* and *soma*. In *Pañcakarmas* too, three *vamana*, *virecana* and *basti* are original ones designed for three *doṣas* (AH. SŪ. 1.25) while the other two are their offshoots.

The decline of the *Pañcakarma* therapy was brought about by the extreme caution required in its operation and probable risk of a number of complications *(vyāpat)* for the management of which an entire section (siddhisthāna) had to be composed.

Though there are traditional practices in Kerala it would be worthwhile to revive the old classical tradition of *Pañcakarma* as described in CS and then to assess its therapeutic efficacy and scientific value.

Prof. R.H. Singh, in this work, has covered a wide range of topics and aspects on *pañcakarma* and has dealt with comprehensively and systematically the classical concepts, traditional practices and recent advances on the subject. On account of its brilliant and critical exposition it is the foremost publication on *Pañcakarma*. I congratulate Prof. Singh for this outstanding contribution to Ayurvedic literature. The publishers also deserve thanks for bringing out the book nicely.

Gurudham,
Varanasi
15.4.1992

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PREFACE

I am happy to present this monograph on *Pañcakarma* Therapy to the prospective readers, which has been written entirely from a new angle. It reviews the ancient classical concepts, traditional practices and recent advances made in this important field with due evaluation and rational assessment. I wrote the first draft of this monograph few years back but it remained incomplete till I visited Czechoslovakia under a Scientific Exchange Programme. During this tour I had to face number of querries about the approach and utility of *Pañca Karma* Therapy and such other unique practices of Āyurveda. This inspired me to complete this monograph and to publish it at the earliest.

The *Pañca Karma* therapy is not only an important component of Āyurvedic treatment but it also forms the fundamental basis of Āyurvedic Therapy. The classical Āyurvediya *Pañca Karma* is the comprehensive method of internal purification of the body by emesis, purgation, enemata, snuffing and blood letting. It is postulated that the vitiated *Doṣas* and *Malas* of the body need to be eliminated radically before a palliative therapy is given. The palliative therapy in the form of drugs and diets may not be effective unless the body channels are cleansed and morbid *Doṣas* and *Malas* are eliminated. This is an unique approach and is very fundamental of Āyurveda.

Unfortunately such an important component of Ayurvedic Therapeutics gradually declined and almost ceased to be in practice specially in North India till recent past. A simplified form of *Pañca Karma* specially of the type of *Vahiḥ Parimārjana* continued in traditional form in South India specially in Kerala and is flourishing even now. But the type of *Pañca Karma* which is practised in Kerala is very much different from classical Āyurvedic *Pañca Karma* Therapy. The Keraliya *Pañca Karma* is more or less the *Pūrva Karma* Therapy, practised as physiotherapeutic procedure. However, these practices are very popular and are also very effective. Thanks to the practitioners and scholars of Kerala who have kept the tradition alive in some

form. As a matter of fact it is the Kerala tradition which is now inspiring the Āyurvedic world in general to revive the classical *Pañca Karma* Therapy.

During post independence era now attempts have been made to revive the practice of *Pañca Karma* at institutional level. But the review of the developments made so far, shows that the progress is not very encouraging. Very few centres have created clinical units for practice of *Pañca Karma* and only sporadic research activities have been initiated. Whatever studies have been reported in the literature lack scientific methcdology. However, there has been increasing awareness about the task ahead.

There is an urgent need of standardising the classical *Pañca Karma* procedures in consideration of the need of today. The *dosa*ge schedule, exact procedures, medicaments, effects and side effects are to be standardised so that an uniform schedule of practice may be developed to be practised at all centres. There is also a need to launch therapeutic trials on *Pañca Karma* procedures individually or in total sequence to demonstrate their utility and possible complications. There have been some studies on this line, although preliminary in nature. They have been reviewed and evaluated in this monograph. Our own studies conducted at Banaras Hindu University on *Pūrva Karmas* and *Pradhāna Karma* have been reproduced in this monograph in abridged form to serve as provisional models for further studies.

After the establishment of the new department of I.S.M. in the Ministry of Health Government of India more and more attention is being drawn to the study and practice of *Pañca Karma*. Department of ISM has recently advised all major hospitals of the Country to open *Pañca Karma* centres. The Department of I.S.M. and Central Council for Research in Āyurveda and Siddha have been keen to develop guide lines for standardization and clinical research in *Pañca Karma* and the author of this book was entrusted with the responsibility of preparing a comprehensive draft guideline which has been now submitted and is being considered by W.H.O. for publication as a global document for this purpose. It is pertinent to note that the new edition of Oxford English dictionary has recently included

'Panca Karma' as a word in its text. All this reveal the growing interest in the subject.

It is hoped that this book will interest the students, researchers, scholars and practitioners interested in classical and traditional practice of Āyurveda with scientific temper. In preparation of this monograph initially I received good help from my co-workers Doctors U.k. Jha, R. S. Singh and P. Muralikrishna. I was greatly inspired to work in this field by my senior colleague Late Professor G. N. Chaturvedi to whome I am grateful. I am specially thankful to my own teacher late Professor K. N. Udupa the former Director Institute of Medical Sciences, Banaras Hindu University for inspirations.

My fine colleagues Dr. Praveen Kumar Madikonda and Dr. M. Srividya have extended substantial help to me in revising the 2nd Edition of this book which I acknowledge with great pleasure.

I am extremely thankful to Prof. P. V. Sharma the noted Āyurvedic scholar for having agreed to write the foreword to this work which is an added attraction to this monograph because of original statements made by Prof. Sharma in the foreword.

Ram H. Singh

Author/

CONTENTS

PAÑCAKARMA-THERAPY

- Ancient Concepts
- Traditional Practices
- Recent Advances

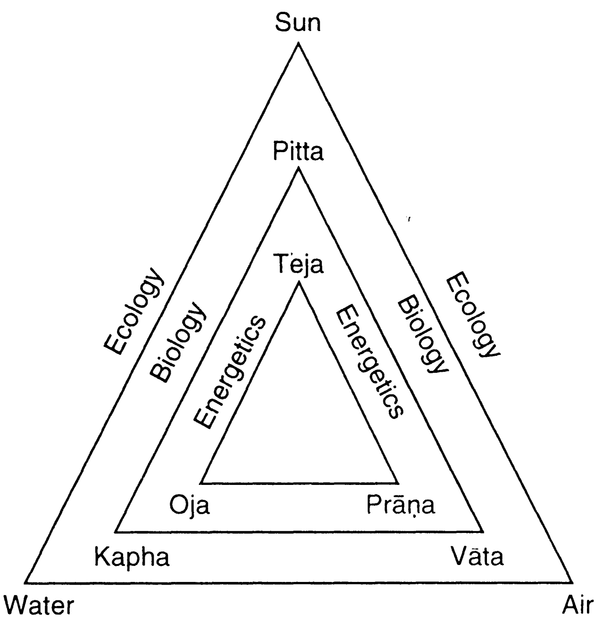
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- Guidelines of Standard Practice

GENERAL INTRODUCTION

Āyurveda is the science of life. It deals with the total creation with special emphasis on the biology of life. The chief objects laid down before this science are the preservation of health and prevention of disease. It envisages a total welfare of the living being and so the term Āyurveda, the science of life is employed.

Āyurveda follows a comprehensive holistic approach considering life as a three dimensional biounit integrally linked inside with the three systems of energy and externally with three master ecological factors adopting a tritriangular model as depicted below.



According to Āyurveda, the living body is composed of five basic elemental substances named as, (1) *Ākāśa* (Ether), (2) *Vāyu* (Air), (3) *Teja* (Fire), (4) *Jala* (Water) and (5) *Pṛthvī* (Earth).

These five physical elements constitute the three essential Bio-components of the living body which are termed as the *Tridoṣas* viz., *Vāta*, *Pitta* and *Kapha*. It may be approximately understood that the gross structure of the body (solid and liquid) is constituted by the *Kaphaja* fraction of the *Tridoṣa* factor in the total body composition. The entire physico-chemical phenomenon including the biochemical and metabolic activities as well as the endocrine functions are the attributes of *Pitta*. And *Vāta* is responsible for the physical activity or the motion in the organism. It is believed that the *Vāta*, though not apparently dominant in physical structure very much, it dominates in the function and is supposed to be the leader of the three *Doṣas*. These three *Doṣas* have contradictory physical and physiological characters and so they are capable of antagonising the activities of each other, thus maintaining an inherent equilibrium. The total spectrum of their physical and physiological characters is reflected in the final constitutional set-up of a man, which is known as *Doṣa Prakṛti* or the psychosomatic constitution of a particular individual. According to the predominance of one or the other of the three *Doṣas* in the body composition, the *Prakṛti* may be predominently of three types viz., *Vātika, Paittika* and *Kaphaja*. Thus Āyurveda recognises three basic human types in which the total living population can be classified. The Ayurvedic classics have put a great emphasis on this classification of human types because each of these types requires a different type of handling, specific to each *Doṣic Prakṛti*, in the preservation of health, prevention and treatment of diseases.

A further development of the compositional concept of living body is the re-categorisation of the morphophysiological structure of the body into seven *Dhātus* or the seven basic tissues which are named as Rasa (Plasma), *Rakta* (Blood), *Māṁsa* (Muscle), *Meda* (Adepose), *Asthi* (Bone), *Majjā* (Marrow) and *Śukra* (Semen). There is a very interesting concept in Indian system of medicine about the evolution of these seven basic tissues. Āyurveda believes that *Rasa* is the first *Dhātu* or tissue which is formed in the body, a part of which when matured gets transformed into *Rakta*. Similarly *Rakta* gets transformed into *Māṁsa*, and *Māṁsa* into *Meda* and so on. *Śukra* is supposed to be the last *Dhātu* or tissue to be formed in this sequence. All these tissues receive their nutrition through their precursor *Dhātu*

or directly from *Poṣaka* (nourishing) *Rasa*. The quintessense of all the seven body tissues is called *Ojas* or vital essence. *Ojas* is a very specialized vital biomaterial which is responsible for sustenance of life and immunity. *Ojas* iş the real biostrength of the body and it represents the immune system. *Bala* immunity has been considered to be of three types : 1. *Sahaja Bala* or natural immunity, 2. *Kālaja Bala* or the age time specific immunity and 3. *Yukti kṛta Bala* i.e. artificially induced or acquired immunity.

There are a number of theories propounded by various authors regarding the mode of nourishment of various tissues in the body. The important modes described for this purpose are – (1) *Kedāri Kulyā Nyāya* (Microcirculation of nutrients, (2) *Khalekapota Nyāya* (Selective assimilation) (3). *Kṣīra Dadhi Nyāya* (Transformation). All these three mechanisms operate simultaneously and play complementary role to each other to achieve the final goal of tissue nourishment. The readers who are interested in Ayurvedic physiology are referred to the Ayurvedic classics and commentaries on them for detail informations.

Another important principle governing the basic physiology is the concept of *Agni* or Biofire. *Āyurveda* describes thirteen types of *Agnis*, viz., (a) One *Jaṭharāgni* effective at the level of gastro-intestinal digestion, (b) Seven *Dhātwagnis* operating in seven basic *Dhātus* or tissues and (c) Five *Bhūtāgnis* controlling the metabolism of five basic elements at molecular level. It is believed that *Jaṭharāgni* is responsible for the alimentary digestion and also governs the function of all the *Dhātvagnis* and *Bhūtāgnis*. The seven *Dhātvagnis* control the metabolism at the level of tissues and *Bhūtāgnis* are responsible for the metabolism at the level of *Bhūtās* It appears that these *Agnis* are specific physico-chemical agents which can be compared with the enzymes and endocrine factors as known in modern system of medicine responsible for all kinds of digestive and metabolic activities.

The Ayurvedic concept of the evolution of a disease is remarkably wide. According to Āyurveda *Vyādhi* or disease has been defined as the state in which both the body and mind are subjected to pain and misery. Whatever may be the nature of the exciting causes of the disease the actual factors which become

excited and imbalanced are the three *Doṣas* and thus basically disease process may be correlated with the three basic constituents of the living body which have been referred to as *Vāta*, *Pitta* and *Kapha*.

The mode and stages of development of a disease are described in the form of six *Kriyā Kālas* i.e. therapeutically selective stages of disease, viz. 1. *Caya* (accumulation of *Doṣa*), 2. *Prakopa* (vitiation of *Doṣas*), 3. *Prasara* (spread of vitiated *Doṣas*), 4. *Sthāna Saṅśraya* (localisation of *Doṣas*). 5. *Vyakti* (manifestation), 6. *Bheda* (chronicity or complications). As a matter of fact the *Kriyā Kāla* is a state during which the specific treatment of the disease should be instituted. Once this period is passed the instituted treatment has no effect. The six stages in the development of disease actually refer to the accumulation of vitiated *Doṣas* who, if not controlled efficiently, get excited and start spreading in the *Dhātus* and influencing one or more part of the body where they become localised to produce the specific features of a disease. Further these spreading *Doṣas* may reach the stage of *Vyakti* and *Bheda* which indicate the aggravated forms of *Doṣic* pathology. This sequence of events may be reversible if managed appropriately in appropriate time.

In principle, the Ayurvedic approach to the treatment of a disease consists of two major procedures-(1) *Saṁśodhana Cikitsā* (Purificatory Therapy) and (2) *Saṁśamana Cikitsā* (Pacificatory therapy). *Saṁśodhana Cikitsā* is the radical treatment of a disease and is supposed to eradicate or eliminate the vitiated *Doṣas* from the body thus completely preventing or curing the disease. *Saṁśamana Cikitsā* is the conservative treatment which consists of conservative measures like *Laṅghana* (fasting), *Pācana* (digestion) etc. by administration of appropriate drugs designed for subsiding or alleviating the vitiated *Doṣas* thus preventing temporarily or subsiding a disease.

In the present context we are mainly concerned with *Saṁśodhana* treatment. It is believed that the diseases cured by *Saṁśodhana* therapy never relapse while the diseases cured by *Saṁśamana* treatment may recur. However, the comprehensive treatment of a disease has to consist of both these types of treatments i.e. *Saṁśodhana* and *Saṁśamana* at appropriate times.

The *Saṁśodhana* treatment consists of a number of physicophysiological measures advocated in the treatment of a disease. The so-called *Pañca Karma* Therapy is a similar *Saṁśodhana* regimen. The *Panca Karma* Therapy can be divided in three major parts - (1) *Pūrva Karma* or the preparatory measures like *Snehana* (oleation) and *Swedana* (fomentation) etc., (2) *Pradhāna Karma* or the main *Saṁśodhana* measures like *Vamana* (emesis), *Virecana* (purgation), *Anuvāsana* (oily enemas), *Āsthāpana* (medicated enemas) and *Śirovirecana* (snuffing) etc. and (3) *Paścāta Karma* consisting of a special post-therapy dietetic regimen known as *Saṁsarjana Krama*. A great importance has been attached to *Pañca Karma* therapy in Ayurvedic classics. As a matter of fact the indispensable place of *Pañca Karma* measures in Āyurvedic management of patients is a fundamental character of Āyurvedic system of medicine. It may not be exaggeration to say that according to the Āyurvedic classics, the therapeutic measures comprehended by *Pañca Karma* therapy are the sheet anchor in the Āyurvedic approach to the treatment of the diseases. These measures have also been indicated to be utilised in the methods calculated to the preservation, maintenance and conservation of health and promotion of longevity. They also form a part in the regimen of *Swastha Vṛtta* or the preventive medicine as they are indicated as prophylactic measures in the context of epidemics and pandemics.

Besides the application of *Pañça Karma* therapy in the treatment of disease stated as a rule these measures are indicated as preparatory procedures before institution of surgery and also before the administration of *Rasāyana* or rejuvenation therapy and *Vājīkaraṇa* or the therapy for the promotion of virility, sexual stamina and productivity. Thus *Pañca Karma* therapy has a direct reference to both, the healthy as well as to the ailing.

Now coming to the relevance of *Pañca Karma* therapy to patho-physiology of a disease, it may be emphasized that *Pañca Karma* Therapy as envisaged in Āyurvedic Medicine is based upon the fundamental principles on which the entire Āyurvedic system of medicine stands. Each one of these procedures constitutes specific measures which have to be applied with due consideration of the particular type of *Doṣic* disturbances and

indications and contra-indications of their use. Therefore, the patient has to be carefully selected, assessed and prepared before the administration of one or the other of the procedures included under *Pañca Karma* therapy. This has to be followed by *Saṁsarjana Krama* or specially planned diet and other post-therapeutic measures. Thus as also emphasised by Chaturvedi (1956) the entire concept of *Pañca Karma* therapy is based on Āyurvedic theories of physiology and pathogenesis.

It would be seen that in course of time possibly since a thousand years the *Pañca Karma* therapy in its complete form has ceased to be in practice. Most of the Āyurvedic practitioners adopt conservative treatment i.e. *Saṁśamana* treatment with the help of various drug therapies. However, even today, there are Āyurvedic practitioners in certain parts of our country specially in Kerala who are successfully practising *Pañca Karma* therapy and claim a major percentage of cure in a number of difficult diseases like arthritis, paralysis etc. This kind of treatment is now rapidly spreading in the north too and is becoming popular abroad.

The great emphasis put on the utility of *Pañca Karma* therapy and the successful practice of these measures by many physicians in certain parts of the country emphasise the need of instituting an enquiry to evaluate the consequent phenomenon of this therapy specially in the context of recent developments in the field of physiology, biochemistry, immunology and physical medicine. This will establish the scientific basis and the rationale of this therapy by working out the biological events caused by the application of these measures in the living organism. Such a study will make the *Pañca Karma* therapy more useful and popular. Because as also emphasised by Chaturvedi (1956) one will agree that this therapy should not be taken to be merely of historical importance and academic interest but its value and efficacy appears to be as good to-day as it was during the days of Maharṣi Ātreya. In a similar spirit the present work has been undertaken.

PRINCIPLES OF TREATMENT

Kāya Cikitsā is a term which means treatment of diseases pertaining to *Kāya*. *Kāya* means to collect. This is in relation to the ingestion, digestion, absorption and metabolism of food. And

therefore, as opined by Dwarakanath (1956) the term *Kāya* means the building up of the body with food.

Thus *Kāyacikitsā* deals with the treatment of diseases arising due to disturbed metabolism and therefore the science of *Kāyacikitsā* in Āyurvedic system of Medicine has been developed in intimate relationship with nutrition and other factors responsible for digestion and metabolism. This is the reason why the concept of *Antarāgni* or Biofire has received maximum attention in the study of the basic principles of *Kāya Cikitsā*. As a matter of fact *Kāya Cikitsā* deals with the diseases arising due to the impairment of *Antarāgni* or biofire and the treatment of the same. The term *Agni* refers to the phenomenon of digestion of the food and further events of metabolism including the synthesis of *Dhātus* or tissue elements and their breakdown for the production of energy.

Essentially *Agni* is of two kinds namely-(1) *Jaṭharāgni* and (2) *Dhātwagni*. The former is chiefly concerned with the chemical processes taking place in the gastro-intestinal tract, while the latter is responsible for higher biochemical processes which take place beyond the absorption of the digested food, which includes all related catabolic and anabolic activities undergoing in tissue elements guided by a number of enzymes and hormones. To be a little more broad *Dhātwagni* can be considered to be a type of heat present in all the tissues, which is responsible for proper functioning and their development. Respective to the *Sapta Dhātus* or the seven basic tissues of the body there are seven types of *Dhātwagnis* specific to each *Dhātu* or tissue viz., *Rasāgni, Raktāgni, Māṁsāgni, Medogni, Asthyagni* and *Śukrāgni* or *Ārtawāgni*. As a rule hypofunctioning of a particular *Dhātwagni* will cause increase of the respective *Dhātu* or the tissue and likewise the hyperfunctioning of the *Dhātwagni* would cause loss or destruction of the related *Dhātu* or tissue. It is believed that all these *Dhātwagnis* are governed by the *Jaṭharāgni*, which remaining in the *Koṣṭha* or Gut influences the *Agnis* of the individual tissues and thereby obliges the body as a whole. Further, each *Dhātwagni* comprises of five types of more specific *Agnis* designed to specifically metabolise the five elemental substances namely *Pṛthvī, Jala, Teja, Vāyu, Ākāśa* contained in the nutrient materials in each *Dhātu*. They are known as *Bhūtāgnis* or Elemental Biofire.

According to Āyurveda the body is an outcome of nutrition. Likewise the diseases are the result of impaired nutrition. Caraka very clearly says "The body is the product of food and diseases occur as the result of faulty nutrition". But this is in relation to the functions of *Agni*. As a principle all sorts of *Agnis* are governed by *Jaṭharāgni*. An impaired *Jaṭharāgni* causes hypofunctioning of the *Dhātwagnis* which lead to faulty utilisation of the nutrients in spite of the provision of the best possible food. As a matter of fact this fault gives rise to diseases. The hypofunctioning of *Agni* results into the production of *Āma* of *Anna Rasa* in the gastro-intestinal tract as well as *Āma* of *Dhātu Rasa* in *Dhātus*. This leads to a poor synthesis of *Dhātus* or tissues and increased production of *Malas* or unuseful products including *Doṣas* viz., *Vāta*, *Pitta* and *Kapha*. This vitiation of *Doṣas* takes the shape of disease or *Vyādhi*. Thus according to Āyurveda faulty *Agni* is the cause of all diseases-*'Rogāḥ Sarve'pi Mandeg'nou'* (Vāgbhaṭṭ).

According to Āyurveda disease or *Vyādhi* is a state in which both the body and the mind suffer from pain, misery and injury. There may be a variety of causative factors of a disease but the actual intrinsic factors which get vitiated and imbalanced to precipitate the disease are the three *Doṣas* viz., *Vāta*, *Pitta* and *Kapha*. These *Doṣas* are the essential constituents of the body and are known as *Doṣas* only because they tend to get vitiated and imbalanced and also tend to vitiate other constituents of the body. The same *Doṣas* in the state of normalcy or equilibrium, support the body and so are considered in the category of *Dhātus*. Here it must be emphasised that *Dhātu* in general is a wide term. In addition to the *Sapta Dhātus* or the seven basic tissues of the body and the three *Doṣas* (*Vāta*, *Pitta* and *Kapha*) in the state of their equilibrium, even *Malas* the waste products of metabolism which are periodically thrown out of the body or made use of by the body for some of its vital functions or even for synthesis of some essential elements, are included in the broader class of *Dhātus* because they also support the body. Thus we see that the *Doṣas*, *Dhātus* and *Malas* in a state of normalcy determine the foundation of the body.

Āyurveda classifies *Vyādhi* or disease in a number of ways keeping in view the nature of the stresses responsible for their causation. *Vyādhi* may generally be of three types viz.,

Ādhyātmika, Ādibhoutika, and *Ādidaivika. Ādhyātmika Vyādhis* are those which have got some psychosomatic basis, while *Ādhibhoutika* diseases are produced due to environmental factors and the *Ādidaivika* diseases are essentially caused by divine factors. *Suśruta* classifies diseases or *Vyādhis* in a different way and mentions seven basic classes of disease according to their causation. They are : *Ādibalapravṛtta, Janmabalapravṛtta, Doṣabalapravṛtta, Saṅghātabalapravṛtta, Kālabalapravṛtta, Daivabalapravṛtta* and *Swabhāvabalapravṛtta.*

Ādibalapravṛtta diseases are those which arise due to the defects inherent in the *Śukra* (sperm) or the *Bīja* (ovum) viz. the hereditary diseases like *Kuṣṭha, Arśa,* etc. As a matter of fact this class of ailments indicate the genetic aspect of causation of disease. The other group is of *Janmabalapravṛtta* diseases which include all sorts of congenital anomalies. In Āyurveda it is believed that congenital diseases occur because of the undesirable actions of the mother during pregnancy. The *Doṣabalapravṛtta* group of diseases correspond to another class of *Vyādhis*. These diseases arise due to the vitiation of the *Śārīra* and/or *Mānasika Doṣas* caused by faulty *Āhāra, Vihāra* and *Ācāra*. These diseases may either be *Śārīrika* (somatic) or *Mānasika* (psychic). The *Saṅghātabala Pravṛtta* diseases are those which are caused by different types of *Ābhighātas* or trauma like various types of external and internal injuries. These ailments can be included in the *Ādhibhoutika* class of diseases. Further, the diseases precipitated by changes in the atmospheric or environmental factors and seasonal variations are also included. *Āyurveda* conceives the possibility that some such diseases are caused by divine factors and are really beyond control of man. These diseases are known as *Daivabalapravṛtta Vyādhis*. On the other hand there may be diseases due to natural changes in structure and function of the body and mind viz., aging, death, hunger, thirst, sleep etc. Even in normal course at a stage these events appear and in that case they are called as *Kālakṛta*, while in others there may be premature development of the same events due to faulty living and in this case they are classed as *Akālakṛta* or untimely.

As already mentioned earlier the disease or *Vyādhi* is the result of imbalance of the three intrinsic factors named *Vāta, Pitta*

and *Kapha*. These *Tridoṣas* in the state of normalcy or equilibrium form the basis of existence of the body. These *Doṣas* are liable to get imbalanced due to a variety of causative factors including seasonal variations. That is why Āyurveda emphasises the institution of optimum *Āhāra, Vihāra* and *Caryā* to cope with the adaptive reactions of the body to the environmental changes. However, the inability of the body to adopt itself to the alterations caused by environmental and other factors, results into the actual loss of equilibrium of the *Doṣas* leading to the production of disease. This phenomenon of the production of disease passes through several phases described as *Kriyākālas*. The concept of *Kriyā Kālas* is very fundamental to the Indian system of medicine. Āyurveda considers the understanding of the *Kriyā Kālas* to be essential for early diagnosis, determination of the prognosis and for institution of preventive and curative measures in the treatment. Therefore, the term *Kriyā Kāla* means the period of taking action meaning thereby the recognition of the actual stage of the disease and institution of the appropriate treatment. In case of medical diatheses the process of evolution of a disease passes through three phases viz., *Caya* or accumulation of *Doṣas*, *Prakopa* or excitation and *Praśamana* or subsidance. *Caya* is that phase of the evolution of a disease when there is an increase and accumulation of the *Doṣa* in its own place. This stage is marked by vague manifestations. In the subsequent phase i.e. in *Prakopāvasthā* the accumulated *Doṣas* get excited by particular causes and are ready to spread over other parts of the body. By this stage the symptoms become clear and the manifestations can be seen specific to the *Doṣas* involved and the subject becomes ill. Āyurveda also conceived the process of self limitation of the diseases and accordingly the third phase in the disease process may be *Praśamana* or *śamana* a stage when the *Doṣas* return to their normal sites and attain actual normalcy leading to the disappearance of symptoms spontaneously or due to the effect of appropriate treatment. The bodily *Doṣas* may also undergo the above mentioned three stages to some extent even as an adaptive response to seasonal, habitual and other environmental variations which can be controlled by appropriate measures of *Ṛtucaryā* etc.

A more vivid description of the evolutive processes of a disease is seen in the context of surgical diseases. *Susruta* mentions six distinct stages of the development of the disease namely : *Caya, Prakopa, Prasara, Sthāna Saṁśraya, Vyakti* and *Bheda*. These features have been described specially in relation to the development of *Vraṇa* or inflammation. For easy understanding it should be considered that these six *Kriyākālas* are the six stages of a disease process in general or the six stages of inflammation in particular. These stages have been described with a view of instituting appropriate therapeutic measures at appropriate stage. The vitiated *Doṣa* if subdued in the stage of *Sañcaya* cannot go for further development, otherwise the process progresses and does not turn to *Śamana* as is possible in case of seasonal reactions of *Doṣas* or in case of certain medically treatable diseases.

The *Cayāwasthā* or the first stage of *Kriyākāla* consists of the loss of the normal free circulation of *Doṣas* leading to stagnation and their accumulation and a marked increase in their own place. This stage of the disease process manifests into vague symptoms with some specific *Doṣic* manifestations. In this stage the patient shows his disliking to the articles of similar properties to that of the involved *Doṣas* and he likes the things otherwise. Once the symptoms indicative of specific *Doṣas* are recognised, the therapeutic measures must be started.

Prakopāwasthā, the second stage of *Kriyākāla* signifies the extension and expansion of the *Doṣas* already accumulated at their own sites. There may be a number of exciting factors specific to each *Doṣa* including *Āhāra, Vihāra, Caryā*, and the seasonal and climatic effects. The medium for spread of the morbific factors of the disease as depicted by Suśruta is *Rakta* or the blood. In fact these factors spread in the medium of *Rakta* through its own channels, the *Srotas*, kept on moving with the effect of *Vāta*.

The third *Kriyā Kāla*, the *Prasara* indicates the spread of the *Prakupita* or excited *Doṣa* to other parts of the body. Here it should be remembered that *Vāyu* being equipped with the power of locomotion, is responsible for spread of the *Doṣa* singly or jointly. These *Doṣas* may give rise to a disease condition at sites of their transportation. One must remember that the *Prakupita*

Doṣa may remain in a quiscent phase or may pass in exacerbations depending on the fact whether they are sufficiently excited or not. *Vāta Doṣa* in the stage of *Prasara* produces symptoms like *Āṭopa* or abdominal distension, pain and gergling sound. *Pitta* gives rise to *Oṣa, Coṣa* and *Paridāha* i.e. burning sensation or painful sucking sensation etc. And *Kapha* causes *Arocaka* or anorexia, *Avipāka* or indigestion, *Aṅgasāda* or inertness of the limbs and *Chardi* or vomiting. The conditions should be treated keeping in view the site of invasion and the invading *Doṣa*.

The *Sthānasaṁśraya* or the fourth stage of *Kriyā-Kāla* essentially denotes the stage of the disease recognisable with prodromal features. By this stage the excited *Doṣa* has extended to different parts of the body or has concentrated in specific structures to produce specific diseases. For instance the *Doṣas* located in *Udara* or abdomen may manifest into *Gulma, Vidradhi, Udara, Agnisaṅga, Ānāha, Visūcikā* and *Atisāra*; when located in the *Vasti* or urinary tract the *Doṣas* may result into *Prameha, Aśmarī, Mūtrakṛchra* etc. Similarly the *Doṣas* situated in the *Meḍhra* or male genital organ produce *Upadaṁśa, Prakaśa* and *Śukadoṣa*, and those situated in *Guda* or the anorectal region cause *Bhagandara* or fistula in ano and *Arśa* or piles. These *Doṣas* may produce *Vṛddhi* or hydrocele in case of *Vṛṣaṇa* or scrotum; diseases of the head and neck when located in that region. Some minor disorders, *Kuṣṭha* and *Visarpa* may result if these *Doṣas* have localised in *Dhātus* like *Twak* or skin, *Māṁsa* or muscle and *Śoṇita* or blood. Likewise one will find *Granthi* or lymphadenitis, *Apacī* or cervical adenitis, *Arbuda* or tumours, *Galgaṇḍa* or goitre and *Alagi* or carbuncle. When the extended *Doṣas* have localised in the *Medas* or adipose tissue, these *Doṣas* can produce *Vidradhi* or osteomyelitis and *Anuṣavi* or periostitis in the *Asthi* or bone tissue. *Ślipada* or filarial lymphoedema, *Vāta Śoṇita* or gout and *Vātakanṭaka* or ankle-joint sprain may be seen in lower extremities and when the *Doṣas* pervade the whole body one may find *Jvara* or pyrexia and *Sarvāngarogas* or the diseases involving the whole body.

By the 5th stage in *Vyakti* the interaction of *Doṣas* and *Duṣyas* manifests in the form of the fully developed disease with clinical features characteristic to the specific *Doṣas* and *Duṣyas*

and their site of involvement. Further the disease may pass to the 6th stage of *Kriyākāla* i.e. *Bheda* when the disease takes a chronic, complicated turn. For instance the disease *Śotha* or inflammation or abscess passes to the stage of *Bheda* when it bursts and takes the shape of a *Vraṇa* or a chronic ulcer.

Thus the Āyurvedic treatment of a disease involves a number of factors, a critical and comprehensive consideration of all the above cited factors is an essential part of the Āyurvedic management of a disease. The consideration of these principles of treatment are more critically required while instituting *Pañca Karma* therapy in a patient.

MAJOR SPECIFIC APPLICATIDNS OF SAṀŚODHAN THERAPY

Pañca Karma Therapy is an integral part of Āyurvedic treatment and as such has its role in every thrapeutic situation. In principles, *Saṁśodhana* is a prerequisite for all *Śamana* treatments. However the major contemporary specific areas of application of *Pañca Karma* Therapy are :

1. Promotive and Preventive Health care as a component of *Swastha Vṛtta* regime.

2. As an integral pre-requisite of *Rasāyana* Therapy and *Kāyākalpa*.

3. Curative Treatment of Chronic Diseases.

SWASTHA VṚTTA :

Pañca Karma has specific application in the care of Tridoṣika Rhythm of *Ṣaḍṛtus* i.e. six seasons. Āyurveda describes six seasons round the year and each season is characterised by specific rhythm viz. *Saṁcaya* (accumulation), *Prakopa* (aggravation) and *Praśama* (remission) of the three *Doṣas* i.e. *Vāta*, *Pitta* and *Kapha*. The period of *Prakopa* (aggravation) of a *Doṣa* warrants *Saṁśodhana*/elimination of the aggravated *Doṣa*. In other words *Saṁśodhan* (*Vaman, Virecana, Basti* etc.) are indicated only in *Prakopa Kāla*. The *Saṅcaya Kāla* of different *Doṣas* does not warrant *Saṁśodhana Karma*. The desired regimen for the *Saṅcaya Kāla* should comprise of Deepana, Pācana, and *Yukta Āhāra-Vihāra* i.e. appropriate life style intervention against the nature of rhythm of a particular

Doṣa. Similarly *Praśama Kāla* or the period of remission too does not need actual *Saṅśodhana Karma*. The following Table summarises the *Tridoṣika* Rhythm and indication of specific *Saṁśodhana Karmas* which may be used as a guideline for *Swasthavṛttaka Saṁśodhana* Karma i.e. 'preventive *Pancakarma*'.

	Ṣaḍṛtus[1] Six Seasons	Months	Saṅcaya	Prakopa	Praśama	Karma Indicated
Adānakāla	1. Śiśira (Winter)	Māgh, Phalgun (Jan., Feb.)	Kapha	—	Vāta	Anti-Kapha-Āhāra, Vihāra, Dīpan Pācana
	2. Vasanta (Spring)	Caitra, Vaisākh (March April)	—	Kapha	Vāta	Vamana
	3. Grisma (Summer)	Jyeṣṭha, Āṣāḍha (May, June)	Vāta	—	Kapha	Anti-Vāta Āhāra Vihāra śamana Karma
Visarga Kāla	4. Varṣā (Rainy)	Śrāvaṇa, Bhādrapada (July, Aug.)	Pitta Kapha	Vāta	—	Snehana Swedana Basti
	5. Śarad (Autumn)	Aswin, Kārtika (Sept., Oct.)	—	Pitta Kapha	Vāta	Virecana
	6. Hemanta (Early winter)	Agahan, Pouṣa (Nov. Dec.)	Kapha	Vāta	Pitta	Basti

हरेद् वसन्ते श्लेष्माणं पित्तं शरदि निर्हरेत्।
वर्षासु शमयेद् वायुं प्राग्विकार समुच्छ्रयात्॥ सु. सू. ६:३८

(Hared Vasante Śleṣmāṇam Pittam Śaradi Nirharet;
Varṣāsu Samayed Vāyum Prāgvikāra Samucchrayāt.)

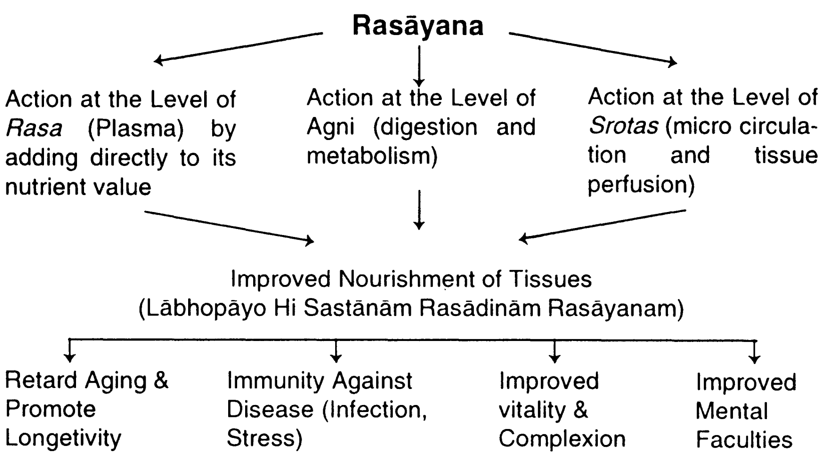
S. S. Su. 6:38

1. आदावन्तौ च दौर्बल्यं विसर्गादानयोर्नृणाम्।
मध्ये मध्यबलं, त्वन्ते श्रेष्ठमग्रे च निर्दिशेत्॥ च. सू. ६

RASĀYANA AND REJUVENATION

Rasāyana Therapy of Āyurveda essentially refers to the process of tissue nourishment and rejuvenation. The *Rasāyana* effect retards ageing and prolongs life. The *Rasāyana* remedies encompass a range of drugs, diets and life style interventions which promote nutritional status of the body and cultiminate into formation of good qualities of *Dhātus—"Lābhāpāyo Hi Śastānām Rasādinām Rasāyanam"* (Ca. Ci. 1). Such an effect cannot succeed unless the channels of the body are clean and hence *Pañca Karma* Therapy is an essential component of *Rasāyana* Therapy. Some of the *Rasāyanas* themselves have biopurifactory effect.

Different *Rasāyanas* act in the body through following mechanisms :



The Ayurvedic texts describe a range of *Rasāyana* remedies which can be categorised as below :

I. As per Method of use :

1. **Vātātapika Rasāyana** (outdoor regimen)
2. **Kuṭiprāveśika Rasāyana** (Indoor regiment)

II. As per goal of use :

1. Kāmya Rasāyana *(Vayaḥ Sthāpanārtha)* : The *Rasāyana* therapy which is used in normal persons to promote

health and longetivity is called *Kāmya Rasāyana* and is further subdivided as below :

a. *Prāṇa Kāmya* (for longevity)

b. *Medhā Kāmya* (for promotion of mental functions)

c. *Shree Kāmya* (for promotion of lusture and complexion)

2. Naimittika Rasāyana *(Vyādhi Nimitta)* : These *Rasāyanas* are used in a patient suffering from a disease with the aim to help the patient to fight with his disease.

III. Special *Rasāyana* uses viz. :

1. *Ājasrika Rasāyana* i.e. routine use of *Rasāyana* as a dietary supplement such as milk, ghṛta etc.

2. *Ācāra Rasāyana* i.e. wholesome conduct, life style and behaviour such as *Sadvritta, Yama, Niyama* etc. also produce *Rasāyana* effect in the body in a nonpharmacological way.

In all such procedures of *Rasāyana* Therapy a physician is expected to take due consideration of many individual and environmental factors while selecting a *Rasāyana* Remedy for a particular person. The factors to be considered are :

1. *Prakṛti* or constitution of the Individual.

2. *Agni Bala* (metabolic status) of the Individual.

3. *Dhātu Status* i.e. consideration of the status of *sapta dhātus* (body tissues and their nutritional status).

4. *Srotas Status* (Circulatory function).

5. Vaya i.e. Age group of the Individual.

6. *Ṛtu Sātmya* or Season i.e. Consideration of Six *Ṛtus* as well as *Ādāna* and *Visargakala* of the year.

7. *Deśa Sātmya* i.e. Climatic variations viz. *Sādhāraṇa Deśa, Jāngala Deśa* & *Ānūpa Deśa.*

Persons with different categories and features of the above factors would need different *Rasāyanas* in consideration of their biological features. Same *Rasāyana* may not be effective in all persons. For instance the different decades of life are associated with different specific biological losses and hence there is a need

to compensate these losses with specific *Rasāyana* remedies. The following guide line of *Śārangadhara* may be useful to follow :

बाल्यं बृद्धिश्छविर्मेधा त्वग्दृष्टिः शुक्रविक्रमौ।
बुद्धिः कर्मेन्द्रियं चेतो जिवितं दशतो ह्रसेत्॥ शा. सं. २/६:२०

(Bālyaṁ Bṛddhiḥ Chhabirmedhā Tvaka Dṛṣṭi Śukra Vikramau. Buddhiḥ Karmendriyaṁ Ceto Jivitam Daśato Hraset. Sa,. S. 2/6 : 20)

The Ayurvedic Classics emphatically emphasise that biopurification of the body is essential pre-requisite for administration of *Rasāyana* therapy because if the body channels are not clean the *Rasāyana* Effect will not be achieved in the same way as due colours do not take up during dying of a cloth which has not been cleaned :

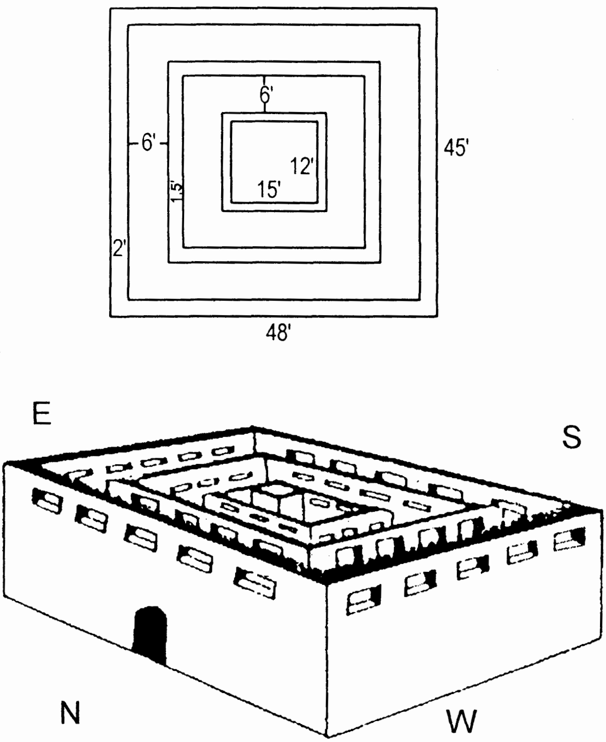
पूर्वे वयसि मध्ये वा मनुष्य रसायनम्।
प्रयुञ्जीत भिषक् प्राज्ञः स्निग्ध शुद्धतनोः सदा॥
नाविशुद्धशरीरस्य युक्तो रासायनो विधिः।
न भाति वासिस क्लिष्टे रङ्गयोग इवाहितः॥
सु. चि. २७:३-४

तस्यां संशोधनैः शुद्धः सुखी जातबलः पुनः।
रसायनं प्रयुञ्जीत तत्प्रवक्ष्यामि शोधनम्॥
च. चि. १/१:२४

तस्मात्पुरा शोधनमेव कार्यं बलानुरूपं नहि वृष्ययोगाः।
सिद्धयन्ति देहे मलिने प्रयुक्ताः क्लिष्टे यथा वाससि राग योगाः॥
चि. चि. २/१:५१

BIOPURIFICATION, RASĀYANA AND KĀYĀKALPA :

The full *Pañca Karma* therapy followed by appropriate *Rasāyana Krama* undertaken for the purpose of *Vayaḥ Sthāpana* or rejuvenation is called *Kāyākalpa*. Such an intensive *Rasāyana* Therapy was called *Kuṭiprāveśika Rasāyana* in classical age as described by the Saṁhitas of Āyurveda. The classic texts describe a specially designed *Trigarbha kuṭi* or a Trispaced therapy chamber for the purpose. See Fig.



Suggested Model of Trigarbha Kuṭi for Kuṭi-pravesik Rasāyana Therapy

Fig. Trigarbha kuṭi

PANCAKARMA IN CHRONIC DISEASES

Besides *Swasthavṛtta* and *Rasāyana Karma* the next important area, where *Pañca Karma* Therapy is essential, falls into the the realm of a range of chronic diseases. Chronicity of a disease is an important entity warranting special consideration in the understanding of the disease and its total management. The central feature of all chronic long standing diseases is Immunopathology. All pathologies whether they are initially

infection, traumatic, metabolic or psychosomatic; lead in due course of time to an immunopathological complex. Due to inherent nature of prolonged standing every disease turns to immune disorder and immunopathology and there occurs significant *Bala Doṣa*. Disorders of *Oja Bala* are of three kinds—*"Traya Doṣāḥ Balasyokta"* i.e. 1. *Oja Vyāpàt*, 2. *Oja Visransa* and 3. *Oja Kṣaya*. The disorder of *Ojabala* is to be rectified with the help of *Rasāyana Therapy*. Besides the immunopathology which is the hallmark of chronic diseases, the next important feature of chronic diseases is *Sroto-distortion* i.e. distortion of channels of the body which warrant cleansing therapy to clean the channels so that the nutrients, medicaments, energy and inpulses may flow freely in the system. For this, *Sanśodhana* through *Pañca Karma* therapy is indicated. A chronic disease cannot be managed without the combined consolidated use of *Pañca Karma* and *Rasāyana. Saṁśodhana* and *Rasāyana Therapy* suitably added to the *Śaman* treatment is expected to afford a cure potential for chronic disease.

A chronic disease complex with immunopathology is the essential outcome of a multifaceted reaction of the body to the antigenic material present perpetually in the system because of a continued ailment and many other microcosmic and macrocosmic factors (Individual and Environmental factors). Such a reaction may manifest in three ways i.e. through either of the three Roga *Mārgas* viz. 1. *Vāhya Mārga* i.e. skin and circulation such as in cases of chronic skin diseases like urticaria, eczema and psoriasis etc. 2. *Madhya Mārga* i.e. joints & bones such as in case of Arthritis, Rheumatoid disease etc. and 3. *Ābhyantara Mārga* i.e. Visceral Organs such as in case of Bronchial Asthma and similar other conditions. None of such chronic diseases can be cured by any treatment belonging to any system of medicine, modern or traditional because of the perpetual pathology. The routine treatment in such conditions has to be merely palliative and life long as is often seen in clinical practice. The only hope of cure could be the radical treatment, through *Pañca Karma* and *Rasāyana* Therapy added to appropriate *śamana* treatment comprehensively planned utilising Diet, Drug and Life Style interventions (See Schema).

AETIOPATHOGENESIS AND MODE OF MANIFESTATION OF CHRONIC DISEASES

Aetiopathogenes			Mārga or Route of Manifestation	Manifestation
Deha Prakṛti (Biosphere/ Life)	→ + ←	Loka Prakṛti (Ecosphere/ Environmental Factors)	Vāhya Mārga (Peripheral Route of Manifestation viz. Skin & circulation) →	Skin diseases like Urticaria, Eczema, Psoriasis etc.
↑ + ↓	↙	‖ →		
ĀMAVIṢA DŪṢI VIṢA	=	Sannikṛṣṭa Nidāna Viprakṛṣṭa Nidāna	Madhya mārga (Middle route of Manifestation viz. Joints etc.) →	Joint Diseases like Āmavāta i.e. Rheumatoid Arthritis etc.
			Ābhyantara Mārga (Internal/Visceral route of Manifestation viz. Visceral organs like Lungs, heart etc. →	Visceral diseases like Bronchial Asthma etc.

In a situation as depicted above Immuno-pathology plays a central role where disorder of *Ojabala* and *Sroto-distortion* as conceived in Āyurveda, are the sheet anchors of the disease phenomenon which can be tackled only with the help of *Sanśodhana* and *Rasāyan* therapy. *Samprāpti Vighaṭana* of such diseases can be achieved only through such fundamental methods of Treatment.

PAÑCAKARMA ŚARĪRA

Śārīra is the science of study of the structure and function of the body. Such a study is essential pre-requisite for the understanding of all branches of life science. Practically *Śārīra* has two-fold realm viz., 1. *Kriyā Śārīra*, 2. *Karma Śārīra*. *Kriyā Śārīra* refers to the normal physiology of the body while *Karma Śārīra* refers to the study of structure and function of the body as specially relevant to a particular *Karma* or therapy. Thus in implication *Karma Śārīra* is the therapeutic physiology. The study of physiology and applied anatomy from such an angle is specially important in the context of *Pañca Karma Therapy* where a number of very specialised external and internal purificatory procedures are applied as a therapy such as massage, fomentation, emesis, purgation, enemata, snuffing, blood letting etc. For proper administration of these procedures for safe and effective outcome it is necessary that a therapist has full knowledge of *Karma Śārīra*. It is with this perspective that the present chapter is being added to this book.

As stated earlier *Pañca Karma Therapy* is usually carried out with a two-fold goal i.e., 1. *Saṁśodhana* or Biopurification, 2. *Saṁśamana* or Rehabilitation. The most essential physiological structures of the human body which act as the medium of the effect of different *Pañca Karma* procedures are No. 1. The *'Kalā'* i.e. the mucosa or membrane system and No. 2. The *Twacā* i.e. the skin or the dermal surface. These two all pervading structures of the body serve as the medium of transport of excretables which are to be eleminated from the body during *Saṁśodhana Karma* i.e. biopurification. Thus the Transdermal and / or Transmembrane cleansing form the two-fold action of external and internal purification respectively. The therapies like oleation, massage and fomentation help in purifying the body through skin by way of sweating or mobilisation and permeation of the *Malas* from *Śākhā* (peripheral circulation) to Koṣṭha (viscera and hollow organs) for subsequent expulsion.

Although *Karma Śārīra* could be a comprehensive topic covering whole of Anatomy and Physiology viewed in terms of therapeutic intervention, in the present context the author intends to present a brief account of the following few aspects only.

1. The *Srotas* System
2. The Seven *Kalās*
3. The Seven *Twacās*
4. The *Āśayas*
5. The *Koṣṭhas*
6. The *Prāṇa* and *Prāṇāyatana*
7. The *Marmas*
8. The Muscles, bones & joints
9. The Vascular, Lymphatic and Neural Path Ways
10. The *Nāsā Śārīra* & Head Neck.

THE ŚROTĀṂSI OR CHANNELS :

The human body is made of innumerable channels — *'Srotomayam hi Śārīram'* Caraka. These channels which may be gross or subtle are called *'Srotas'*. For proper functioning of the body it is necessary that the channels of the body are clean and competent to flow the nutrients, excretables, medicaments as well as the energies and impulses. If the channels are blocked the flow of nutrients, energies and metabolities is obstructed and the total body physiology is distorted leading to a morbid state. Thus according to Āyurveda *Srotoduṣṭī* or channel defect is the basic abnormality which is considered the sheet anchor of all diseases and disorders. This is why the propounders of Āyurveda innovated the concept of *Saṁśodhana* or biopurification through *Pañca Karma* Therapy as the essential component of the therapeutic modalites.

A *Śrotas* refers to a structure in the body which may have space inside, may have openings (i.e. it should not be a closed blind space), it may have a content in the form of a nutrient, a metabolite, an excretable or a biological fluid. A *Śrotas* should also have an inherent tendency of vibration, pulsation or

movement—*'Sravaṇāt Srotaḥ'.* A living organism has innumerable structures in the body which may have all the above mentioned attributes at different levels. We may categorise such structures as gross, medium and minute. Caraka in *Srotovimāna* chapter describes 13 gross physiological channels spread all over the body each one having a specific seat of its origin or *Mūlam.* These 13 gross channels represent the major physiological systems of the body which are prone to suffer from a specific set of diseases and need to be clinically examined during *Rogi-Roga Parikṣā.* In addition to these 13 gross channels the body comprises a large number of small channels which are usually in the form of minute tubular structures like blood vessels and capillaries, lymphatics, nephrons, seminiferous tubules, biliary channels, bronchioles, etc. All these fine tubular structures are medium size *Srotāṁsi* and perform specific *Srotas* functions through the dynamic endomembrane system and endothelium which need to be clean and permeable so that the flow and transfer of their contents take place normally.

At tertiary level the *Srotas* systems also operates at the level of each cell. Each cell has space inside it, it has multiple opening in the form of pores in the cell membrane, and there are certain contents in each cell space and it vivrates. The cell membrane being the part of the membrane system of the body, performs all functions of membrane biology and as such the phenomenon of *Saṁśodhan* or biopurification takes place at cellular level too and hence the concept of *Pañca Karma Therapy* and *Saṁśodhana* has to be conceived upto cellular level.

Caraka describes Thirteen *Sthūla Srotāṁsi* or gross channels which carry on the gross major systemic functions of the body like digestion, respiration, excretion, circulation, locomotion etc. Each of these Thirteen channels has a *Mūlam* i.e. the seat of origin or the main organ or viscera which is responsible for the function of the particular *Srotas.* The following table describes the distribution of the 13 channels over the six parts of the body *(Ṣaḍāṅgas)* and their *Mūla* as well as the possible pathologies.

Aṅga	Srotas	Mūla	Correlate
Śirogrivā (head-neck)	1. Manovaha	Hṛdaya (Brain)	Psychic system
	2. Udakavaha	Tālu (Palate) Kloma (Throat)	Hydration system
Uras (Chest)	3. Prāṇavaha	Hṛdaya (Heart) Mahāśrota (RT)	Respiratory System
	4. Rasavaha	Hṛdaya (Heart) (Daśa Dhamanī) (Arterial Trunk)	Circulatory System
Udara (Abdomen)	5. Raktavaha	Yakṛta (Liver) (Pleehā) (Spleen)	Haemopoetic System
	6. Annavaha	Āmāśaya (Stomach) Vāma Parśwa (Lt. flank)	Upper GIT
	7. Purīṣavaha	Pakwāśaya, Sthula Guda	Lower GIT
	8. Mūtravaha	Bastī, Vaṅkṣaṇa (Vṛkkam)	Urinary System
	9. Śukravaha	Muṣka, Śepha	Reproductive system
	10. Medovaha	Vṛkka (Kidneys) Vapāvahana (Omentum)	Adipose system
Śākhā (Extremities)	11. Māṃsavaha	Snāyu, Twak	Locomotor system
	12. Asthivaha	Jaghana	
	13. Majjāvaha	Asthi, Sandhi	
	14. Swedavah3a	Loma Kūpa	

In totality the Saṁśodhana takes place through trans-membrane exchange at all the above mentioned three levels whether it is the mucous membrane of the gross channels (GIT, RT, UT etc.) or at the level of endothelium of fine tubular structures or at the level of cell membrane at individual cellular level. All this is the membrane function and hence Saṁśodhana therapy is to be considered in relation to the membrane biology.

CONCEPT OF SAPTA-KALĀ :

Suśruta in *Śārīra* Sthana Chapter 4 - *'Garbha Vyākaraṇa Śārīra'* describes Seven *Kalās* or Membrane systems viz.,

1. *Māṁsadharā Kalā* (Deep fascia & intermuscular Septa)

2. *Raktadharā Kalā* (Endothelial lining of Blood Vessels and sinuses in liver and spleen).

3. *Medodharā Kalā* (Omentum, deep fascia)
4. *Śleṣmadharā Kalā* (Synovial Membrane)
5. *Purīṣadharā Kalā* (Mucosa of Colon and Rectum)
6. *Pittadharā Kalā* (Mucosa of Small Intestine).
7. *Śukradharā Kalā* (Mucosa of Vesiculae seminalis and vas deferens etc.).

THE CONCEPT OF SAPTA-TWACĀ :

Āyurveda (SS. Su. 4) vividly describes Seven layers of Skin which is strikingly comparable to the micro-anatony of skin as known today. The knowledge of *Karma Śārīra* of Skin is essential for a *Pañca Karma Therapist* particularly in the application of *Snehana, Abhyaṅga* or massage and *Swedana* because all these *Karmas* are administered through the skin and its Seven layers. The pressure and duration of massage, the nature of medicated oil, and the degree of heat of *Swedana* will have to be determined in consideration of the microstructure of the skin to ensure the therapeutic and nutrient effect of the medicaments and their penetration. The following table shows the Seven *Twacās* and their correlates :

Twacā	Thickness in Brithi	Āsrayi/ Content	Modern Correlate	Specific Pathology
1. Avabhāsini (Udakadharā Ca.)	1/8	Rasa	Stratum corneum	Sidhma Kuṣṭha
2. Lohitā (Asṛgdharā)	1/16	Rakta	Stratum Lucidum	Tila Kālaka, Nyakṣa, Vyaṅga
3. Śvetā	1/12	Māṁsa	Stratum Granulosum	Carmadala
4. Tāmrā	1/8	Meda	Stratum Spinosum	Switra, Kilāsa
5. Vedini	1/5	Snāyu (Nerve endings)	Stratum Basale	Kuṣṭha, Visarpa
6. Rohiṇi	01	Lasikā (Deeper vessels & Lymphatics	Reticular Layer	Granthi, Apacī, Arbuda, Ślīpada Galagaṇḍa
7#. Māṃsadharā (Susruta Only)	02	Sweda Kūpa	Subcutaneous Layer	Vidradhi, Arśa, Bhagandara

Caraka and Vāgbhaṭa consider only 6 *Twacās* and exclude the Seventh *Māṃsadharā* which is described only by Susruta.

Conventionally for routine consideration following three layers of Skin are described as below :

1. The Epidermis
2. The Dermis
3. The Subdermis

The epidermis contains two types of cells viz., 1. Keratinocytes, 2. Melanocytes. The outer most nuclear portion of epidermis is 'Stratum Corneum' and it acts like a tough Keratinous membrane as a waterproof wall between internal fluid milieu and environment. It protects the skin from loss of fluid and entry of toxic agents. It is also a passive membrane for some substances which move across the skin by passive diffusion in direction of concentration gradient. Oleation, massage and fomentation which are routinely done as *Pūrva Karma* in *Pañca Karma* Therapy operate directly on the epidermis, and may influence the Kerationocytes and their protective quality as well as the Melanocytes which are responsible for colour and complexion of the skin.

Under the epidermis lies the dermis which is essentially the connective tissue element and embraces nerves, blood vessels, lymphatics, glands and certain specific types of cells such as Mast cells, Fibroblasts and Histiocytes. Mast Cells form an important assembly which are known to produce Histamine a humour intimately concerned with vasomotor activity, allergic reactions and control of several secretory functions. Histamine is the mediator of skin allergies including urticarias. Presumably the therapeutic *Abhyaṅga* may have direct Mast cell stabilising effect besides Mast Cell cleansing effect which may help in curing skin allergies and urticarias. The Fibroblasts which lie in the dermis are responsible for producing Collagen and other fibrous material which play important role in healing of inflammation.

The subdermis is essentially the subcutaneous tissue which includes subcutaneous fat. This layer acts like a cushion between the dermis and the bones. A massagist and *Pañca Karma* Therapist should always keep in his mind the above mentioned structure of the skin and its constituent cellular structures while determining the degree and duration of the pressure of massage, nature of oil and medicaments and the degree of heat of *Swedana* to be used in a particular case.

EFFECT OF ABHYAṄGA, MASSAGE & SWEDANA ON COMPONENTS OF SKIN :

Layers of skin	Components		Attributes
1. Epidermis	Keratocytes	→	Surface Protection
	Melanocytes	→	Colour of Skin
2. Dermis	Blood Vessels, Nerves, Lymphatics Glands	→	Support
	Cells—Mast Cells	→	Histamine
	Fibroblasts	→	Fibres
3. Subdermis	Subcutoneous Fat	→	Cushion Function

Therapy : Snehana-oleation, Abhyanga-Massage, Swedana-Heat → Keratocytes, Melanocytes, Mast Cells, Fibroblasts → Cytostabilising Effect on different Cells & their functions

↓

- # Skin health
- # Colour & Complexion
- # Allergy control
- # Elasticity of skin
- # Subcutaneous effect
- # Vascular effect
- # Lymphatic drainage
- # Neural stability

CONCEPT OF ĀŚAYA :

Such organs whose essential function is to provide seat or storage or *Adhiṣṭhāna* for important biological materials are termed as *Āśaya* viz *Āmāśaya, Pakvāśaya, Garbhāśaya* etc. According to Susruta storing organs *(Āśayas)* are Eight in number namely : 1. *Vatāśaya*, 2. *Pittāśaya*, 3. *Śleṣmāśaya*, 4. *Raktāśaya*, 5. *Āmāśaya*, 6. *Pakwāśaya*, 7. *Mutrāsaya*, 8. *Garbhāśaya* (S. S. Śā 5:7).

Vātāśaya refers to the *Adhiṣṭhāna* of *Vāta*. From textual point of view there are two seats of *Vāta* : (1) *Fuffusa* (Lungs)—*'Udānavāyorādhāraḥ Fuffusaḥ procyate budhai'* (Śāraṅgadhara), (2) *Pakwāśaya* (Colon)—*'Tatrāpi Pakwāśaye Viśeṣeṇa Vātasthānaṁ'* (Caraka Sūtra 20). The *Pittāśaya* also refers to *Āmāśaya—Tatrāpyāmāśayo Viśeṣaṇa Pittasthānam* (Caraka). From contemporary understanding *Pittāśaya* is usually understood to refer to Gall bladder-Liver-Pancreas as these organs are directly concerned with *Pācaka Pitta*. The *Ślesmāśaya* refers to Uras or chest—*Tatrāpyuroviśeṣeṇa śleṣmasthānam* (Caraka); *Śleṣmāśayaḥ Syādurasi* (Śāraṅg-dhara). *Uras* should be understood as the lungs which are the main organs of the chest. The *Raktāśaya* is understood to refer to Liver and Spleen—*Śoṇitāśya Sthānam Yakṛtpleehanam* (Suśruta Su. 31). *Āmāśaya* means stomach. Pakwāśaya means the Āśaya where digestion takes place viz Intestines. The *Mutrāśaya* means Urinary Bladder. *Garbhāśaya* is the uterus where lies the foetus.

KOṢṬHĀṄGA (MAJOR VISCERALORGANS) :

Caraka (Ca. S. Sa. 7) describes 15 *Koṣṭhāṅgas* i.e. solid visceral organs. Suśruta, Vāgbhaṭṭa, Bhela and Śāraṅgdhara also give more or less similar descriptions, These organs are of great physiological significance. And a *Pañcakarma Therapist*, while undertaking biopurificatory or rehabilitative therapies, must take due precautions. The surface therapies like massage and or fomentation i.e. *Snehana/Abhyaṅga* and *Swedana* should duly account for the safety of these organs and one may also think of developing therapies to induce beneficial visceral reflexes to rehabilitate the organic functions. There are organs where application of heat *(Swedana)* is contraindicated in Ayurveda viz., the *Śiras* (Brain), *Hṛdaya* (Heart) and the *Muṣka* (Testes). Similarly excessive pressure of massage over certain organs may be injurious while status condition of organs like Stomach and Rectum needs to be carefully evaluated before administering *Vamana* (Emesis) and *Virecana* (Purgation) and *Bastī* (Enemata) therapy respectively.

Caraka in *Śārīra* Sthāna Chapter 7 enlists following 15 *Koṣṭhāṅgas* (Ca. Śa 7) :

1. *Nābhī* (Umbilical Region)
2. *Hṛdaya* (Heart)
3. *Kloma* (Throat)
4. *Yakṛta* (Liver)
5. *Plīhā* (Spleen)
6. *Vṛkka* (2) (Kidneys)
7. *Bastī* (Urinary Bladder)
8. *Puriṣādhāra* (Colon and Rectum)
9. *Āmāśaya* (Stomach)
10. *Pakvāśaya* (Colon)
11. *Uttara Guda* (Higher Anus)
12. *Adhār Guda* (Lower Anus)
13. *Kṣudrāntra* (Small intestine)
14. *Sthūlāntra* (Large intestine)
15. *Vapāvahan* (Omentum).

MARMAS AND THE VITAL SPOTS :

Ayurveda describes 107 *Marma points* in the body. These *Marma points* represent vital spots which are considered vulnerable points and are sensitive to injury. They need to be specially protected. Some of these *Marmas* are very vital and injury to them is readily fatal. They are termed as *Sadyaḥ Prāṇa hara Marma*. Besides, the texts describe Three Principal *Marmas* as major *Marmas* i.e. *Trimarma* (also see the context of Trimarmiya Cikitsā and Trimarmiya Siddhi Chapters of Caraka Samhita). The Trimarmas are 1. *Śiras* (Head-Brain), 2. *Hṛdaya* (Heart) and 3. *Bastī* (the Kidneys / bladder).

The *Marmas* are classified in different categories based on different scores such as the nature of their tissues, their distribution in different parts of the body, their influences, size of the *Marma spot* etc.

Tissue Constitution	No.	Location on the Body	No.	Effectwise	No.
Māṃsa Marma (Muscular)	11	Śākhā marma (In Limbs) 11x4	44	• Sadyaḥ Prāṇahara (Readily fatal)	19
Sirā Marma (Vascular)	41	Udar & Uras (In the Trunk)	12	• Kālāntara Prāṇahara (Slowly fatal)	33
Snāyu Marma (Neural)	27	Pṛṣṭha Marma (On the Back)	14	• Visalyaghna (Fatal Post-operatively)	03
Asthi Marma (Bone)	08	Śirogrivā (Head Neck)	37	• Vaikalyakara (Causing permanent disability)	44
Sandhi Marma (Joints)	20			• Rujākara (Painful)	08
	107		107		107

Anatomical and applied physiological information about the above *Marmas* is essential for a *Pañca Karma Therapist* so that he may avoid the possibility of any kind of injury or trauma to these vital spots during the therapy. Such specific information may also help the therapist to select appropriate therapeutic intervention through *Marma* points such as *Marma massage, Marma pressure, Marma Basti* etc. on the lines of acupressure or acupuncture as practised in Traditional Chinese Medicine. For details of *Marma Vijñāna* the readers are advised to refer to Suśruta Saṁhita *Śārīra* Sthāna Chapter 6.

PRĀṆĀYATANA (LIFE ORGANS) :

The Ayurvedic texts refer to the concept of *Prāṇa* or life force in an unique way including certain *Prāṇic forces* of the body like *Vāta, Pitta, Kapha, Sattva, Raja, Tama* etc. besides a range of exogenous factors like air, water and food etc. on which the life is inherently dependent. Caraka (Ca. Sa 7) classically enlists the following as *Prāṇāyatana*. These are the parts of the body where the life phenomenon is most obvious and transparent. Injury to these organs is considered fatal. The *Prāṇāyatanas* are :

1. *Murdhā* (Head & Brain)
2. *Kaṇṭha* (Throat)

3. *Hṛdaya* (Heart)
4. *Nābhī* (the Centre of Abdomen)
5. *Guda* (The Anus)
6. *Bastī* (Urinary Bladder)
7. *Ojas* (The Vital Essense of all Body Tissues)
8. *Śukra* (The Semen)
9. *Śoṇita* (Blood)
10. *Māṃsa* (Muscle)

The first Six of these are also enlisted as important *Marmas*. In a different context in Sutra Sthana (Chapter 29) Caraka enlists the *Prāṇāyatanas* in a slightly different way viz.

Śaṅkha (Temples = 2)	2	Rakta (Blood)	1
Marmatraya (3)	3	Śukra (Semen)	1
Śirasa (Head)			
Hṛdaya (Heart)			
Bastī (Kidney)			
Kaṇṭha (Throat)	1	Ojas (Vital Essense)	1
		Guda (Anus)	1

These vital parts of the body represent the life, rather the life phenomenon is concentrated in these parts of the body hence they warrant special care during therapy. As such a *Pañcakarma Therapist* is expected to know fully well the surface anatomy and applied aspects of the vital body parts so that he may exercise necessary precautions to protect these organs. The good knowledge of the entity of such vital body parts may also enable a therapist to apply appropriate therapeutic techniques to elicit suitable therapeutic or rehabilitative response through these organs.

THE CAKRAS & THE NĀḌIS

The *Tāntrika* texts describe interesting *Tāntrika* anatomy in the context of *Kuṇḍalinī*. The vital life energy i.e., the *Prāṇa* flows throughout the body through a number of channels called *Nāḍīs. Iḍā, Piṅgalā* and *Suṣumnā* are the principal *Nāḍīs*. These *Nādis* function in relation to six principal *Cakras* through which specific

physical, mental and autonomic functions take place in the body. The following table summarises the location and functions of the *Ṣaṭcakras*.

Cakra	Sthāna (Site)	Vṛtti (Attributes)
1. Mūlādhāra Cakra	Between the rectum and genitals	Creative thinking, emotions and pleasure.
2. Svādhiṣṭhāna Cakra	At the root of the genitals i.e. between the Mulādhāra and Maṇipura Cakras.	Doubt, lack of faith, False knowledge, False faith.
3. Maṇipura Cakra	At the Nābhī (Umbilicus)	Shyness, Unstability Jealousy, Desire, Laziness, Sorrow, Dullness, Ignorance, Hatāva.
4. Ānāhata Cakra	Chest on the Cardiac Plane	Hope, Protection, Anxiety, Effort, Power consciousness, unjustified demand, Falsehood, ego, differentiation uncertainty, sorrow.
5. Viśuddha Cakra	At the root of the neck.	Origin of the seven kinds of voice, poison, nector.
6. Ājñā Cakra	On the forehead between the two eyebrows	The Triguṇās

Above these, is the *Mānas Cakra* having six *Nāḍis* which communicate with five *Jñānendriyas* and sensations arising from the brain during dream and false perception. Above the *Mānas Cakra* is located the *Soma-Cakra* which has sixteen fold functions. Located at the highest level is the *Sahasrāra Cakra* which exhibits the sounds and the energies in different forms in their original states as related to all the *Cakras* located below. The static and kinetic forms of energy unite in the *Sahasrāra Cakra* where all the attributes of lower *Cakras* are vividly present. The *Sahasrāra Cakra* exhibits *Śānta Buddhi* or *Parama-Buddhi* and thus the attributes of each of the *Cakras* are exhibited in the form of *Vṛttis*. The *Vṛttis* of the lower *Cakras* viz., *Mūlādhāra* and *Svādhiṣṭhāna* are physical and selfish. The *Vṛtti* of *Ānāhata*

Cakra is of mixed nature. The *Cakras* located above the *Ānāhata Cakra* are possessed with good qualities.

Symbolically existence of each of these *Cakras* is like a lotus. The petals of the lotus represent the *Nāḍīs* and the energies present in the respective *Cakras*. Each *Cakra* constitutes a *Yantra* or equipment. The methodology of the operation of such an equipment is a *Tantra*. *Tantra* and *Mantra* are utilized jointly or singly for arousal of *Kuṇḍalinī* and to ascend the same through the *Cakras* located one above the other.

Ordinarily only few *Cakras* and *Nāḍīs* are functioning. These can be activated in their original form by practice of *Yoga*. The *Kuṇḍalinī power* is already present in the body in potential form.

The *Mūlādhāra Cakra* is the seat of the potential form of *Kuṇḍalinī* while the *Sahasrāra Cakra* is the seat of the energy form of *Kuṇḍalinī Śakti*. The effort of uniting these two forms of *Kuṇḍalini Śakti* leads to arousal of *Kuṇḍalinī* and its ascent from *Mūlādhāra* towards *Sahasrāra Cakra* stepwise. When such *Kuṇḍalinī Śakti* reaches near the successive *Cakras*, the practitioner of *Kuṇḍalinī Yoga* starts experiencing the respective levels of the intellect *(Buddhi)*. Such an experience is known as *Kuṇḍalinī Yoga* where the serpent power is aroused in an individual which leads to expression of *Virtues*. Ordinarily the *Iḍā, Pingalā* and *Suṣumnā nāḍīs* circulate vital energy i.e., *Prāṇa* in the body. *Piṅgalā* is also known as *Sūryā* (Sun) *Nāḍī* which is related with the right nostril. *Īḍā* is called *Candrā* (Moon) *Nāḍi* which is perceived through the left nostril. These two function alternatively. *Īḍa* and *Piṅgalā* are connected below with *Mūlādhāra Cakra* and they encircle around the *Suṣumnā* while proceeding above to merge with the *Ājñā Cakra* and again to get separated in order to associate with the left and right nostril respectively. The *Suṣumnā Nāḍi* starting from *Mulādhāra Cakra* pervades above upto the *Brahma Randhra* which is located in the centre of the head. The *Brahma Nāḍī* is present in the *Antaḥ Kalā* of the *Suṣumnā*. The *Prāṇa* i.e., the *Kuṇḍalinī Śakti* when aroused, ascends remains closed and the *Kuṇḍalinī* is confined at the *Mūlādhāra* in serpent form.

When the *Suṣumnā* opens, the *Īḍā* and *Piṅgalā* stop functioning and the moment the *Prāṇa* starts ascending through

Suṣumnā, their function stops and breathing through both the nostrils starts. The aroused *Kuṇḍalinī* reaches the *Sahasrāra* and enables the *Jīva* to unite with the *Brahma*. Thus practice of *Yoga* permits the great *Siddhis*.

A *Pañcakarma therapist* should be conversant with the surface anatomy of *Ṣaṭcakra* and he should suitably account for them.

THE CONCEPT OF ENTERIC NERVOUS SYSTEM (ENS) :

According to Ayurveda, the entire body physiology is governed by the *Tridoṣa Factor* comprising of *Vāta, Pitta* and *Kapha* systems. The *Kapha system* provides the volume and shape to the body and is responsible for the body's solid substratum, its stability as well as its immune defence system. The *Pitta system* represents digestive and metabolic activities and related functions while the *Vāta system* possibly governs all aspects of neuro-impulsive activities.

Although it is not right to crudely compare the *Vāta system* of Ayurveda with nervous system as known in conventional modern medicine, but it can be safely stated that most of the neuro-impulsive activities of the living body are the attributes of *Vāta system*. However, when one goes into descriptive details as available in Ayurvedic texts, one may find it difficult to arrive at definitive conclusions. For instance, *Pakwāśaya* i.e. colon is considered as the principal seat of *Vāta*, and *Bastikarma* i.e. therapeutic enemata are the specific therapy for rectification of *Vāta Doṣa*. Ayurvedic Classics emphasise that *Vāta* is the Master Humour and hence *Bastikarma* is the Master Therapy for all major ailments afflicting the body. Thus according to Ayurveda the gut is the most important part of the body which governs the function of the entire body. If we compare these age old concepts of Āyurveda with the recent developments in the knowledge of Enteric Nervous System depicting the entity of 'Gut Brain' and influence of *Basti Karma*, it opens newer vistas of knowledge.

According to Goyal and Hirano (1996) "The enteric nervous system (ENS) is a collection of neurons in the gastrointestinal tract that constitues the "brain of the gut" and can function independent of CNS. This system controls the motility, exocrine and endocrine secretions and microcirculation of the G.I. Tract. It

is also involved in regulating immune and inflammatory processes". Developmentally the enteric nervous system is derived from cells of the vagal segment of the neural crest that migrate to the cranial portion of the gut and subsequently move caudally to populate the entire gastro-intestinal tract.

THE STRUCTURE :

Originally the enteric nervous system was considered to be part of autonomic component of the peripheral nervous system where the neurons in gut wall were conceived to be postganglionic parasympathetic neurons. It is necessary to pointout that the idea of 'brain of the gut' is not new. It was in early 1900s that it was observed that intestinal peristaltic contractions were coordinated-reflexes involving the intramural nerves and most of the enteric neurons did not contract the parasympathetic axons of CNS directly. Further, the study of the functional and chemical diversity of enteric nervous system showed that the enteric nervous system closely resembled the CNS (Gershon et. al., 1994). The enteric nervous system contains over 100 million neurons comparable to the number of neurons found in the spinal cord (Furness and Costa, 1987). The enteric nervous system (ENS) is conceived as a displaced part of the CNS which retains communication with it through sympathetic and parasympathetic afferent and efferent neurons. The part of CNS which is connected with the enteric nervous system is termed as central autonomic neural network through which the ENS exercises neural control of all functions of GIT.

The nerve cell bodies in ENS are grouped into small ganglia which are connected by bundles of nerve processes forming two major plexuses namely 1. Myenteric (OR Auerbach's plexus); 2. Submucous (OR Meissner) plexus. The Myenteric plexus extends through the entire length of the gut and lies between the longitudinal and circular layers of gut muscle. It essentially provides motor supply to the two layers of muscles as well as the secretomotor innervation to the mucosa besides numerous projections to the submucosal ganglia and to enteric ganglia of the gall bladder and pancreas and to the sympathetic ganglia. The submucous plexus is located in the submucosa between the circular muscle layer and the muscularis mucosa. It

is most developed in small intestine and plays important role in Secretory Control.

The ganglia comprise of tightly packed nerve cell bodies, terminal bundles of nerve fibres and glial cells and their processes. The enteric glial cells produce inter-leukins and express MHC Class II antigen in response to stimulation by Cytokinins (Ruhi and Collins, 1995) indicating the role of the enteric glia modulating inflammatory responses in the gut. More than half a dozen morphologic forms of neurons have been identified in the ENS, two major forms are termed as Type I and Type II Neurons.

CHEMICAL MEDIATORS OF ENS :

Initially the chemical mediators of ENS were thought to be only the Neurotransmitters such as Acetylcholine and Serotonin. Later Purines viz. ATP, Aminoacids like GABA and peptides like Vasoactive Intestinal Peptides (VIP) were also listed as chemical mediators of ENS and now Nitric oxide is considered as a Neuro transmitter in ENS similar to CNS. Over 20 candidate neuro transmitters are identified in ENS. The neurons which make up ENS are classified as 1. Intrinsic afferent neurons, 2. Interneurons and 3. Motor neurons.

INTERCONNECTION BETWEEN CNS AND ENS :

Inspite of the fact that ENS may function independently of CNS, it is necessary to note that CNS plays an important role in coordinating the diverse functions of the ENS. ENS is well connected to the central autonomic neural network in CNS through both senory and motor pathways of the sympathetic and parasympathetic nervous systems.

The targets of Enteric Neurons are : 1. Smooth Muscles responsible for GI motility, 2. Mucosal secretory Cells, 3. G.I. endocrine cells, 4. G.I. microvasculature that maintains mucosal blood flow during intestinal secretion, 5. Immunomodulatory and inflammatory cells of the gut which are involved in mucosal immunologic, allergic, and inflammatory responses.

The disorders of ENS include various kinds of motility disorders. Achalasias, Gastric stasis and outlet obstruction, Acute intestinal ileus and chronic intestinal pseudo-obstruction,

Megacolon, Generalised disorder of Motility, Inflammatory and Immunological mediated Bowel diseases etc.

Thus as also suggested by Goyal and Hirano (1996) "The Enteric Nervous System is increasingly recognised as having a central role in the physiologic and pathophysiologic features of the G.I.T. Despite recent advances little is known about the details of the neural circuitry and the neurotransmitters involved. Further advances in our understanding of the ENS will have important implications for the treatment of a wide variety of gut disorders While illuminating the workings of the "little brain" of the gut, these advances may also help unravel the workings of the brain itself."[1]

In view of the recent informations described above about the structural and functional entity of an Enteric Nervous System a minibrain of the gut, the ancient wisdom of Āyurveda considering the *Pakwāśaya* as the seat of *Vāta* System and the provision of *Basti* Therapy (medicated enemata) as the major systemic therapy for nervine system appear interesting and prompt open newer vistàs for future research on Enteric Nervous System.

Figure 1. Innervation of the Gastrointestinal Tract.

The neural plexuses in the gut represent an independently functioning network known as the enteric nervous system, which is connected to the central autonomic neural network in the Central nervous system by parasympathetic and sympathetic nerves. The enteric nervous system may influence the effector systems in the gut directly or may do so indirectly through its action on intermediate cells, which include endocrine cells, the interstitial cells of Cajal, and cells of the immune system, such as Mast cells. The bodies of the primary vagal and primary splanchnic afferent neurons are located in the nodose ganglia and the dorsal-root ganglia, respectively; each carries distinct information from the gut to the central nervous system. The sysmbol represents afferent-nerve endings, and the arrows show the direction of neural transmission. [After Goyal & Hirano 1996]

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1. Goyal, R. K. and Hirano, 1 (1996) : Enteric Nervous System — A Review. New England Journal of Medicine April 25, 1998.

Figure 1.

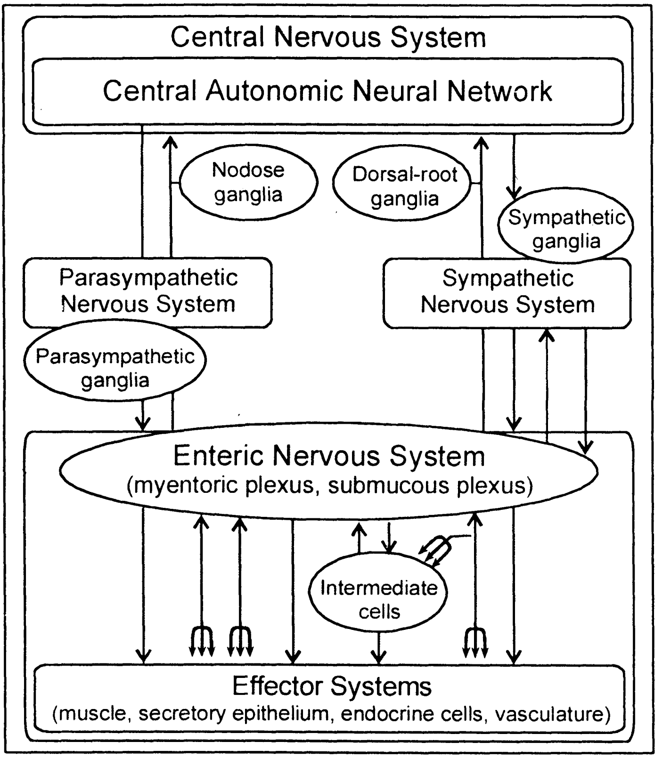


Figure 2. Intestinal Peristaltic Reflex.

"Peristalsis is the result of a series of local reflexes, each consisting of a contraction of intestinal muscle above an intraluminal stimulus and a relaxation of muscle below the stimulus (inset, upper-left-hand corner). The release of 5-HT by mucosal stimulation or mechanical distention of the gut lumen (main panel) triggers activity in the intrinsic afferent neurons (O). Above the site of the stimulus, ascending cholinergic interneurons (□) relay this signal to excitatory motor neurons (□) containing Acetylcholine (ACh) and Substance P. As a result, the circular-muscle layer above the stimulus contracts. At the same time, below the stimulus site, descending cholinergic interneurons activate inhibitory motor neurons that contain nitric oxide (NO), vasoactive intestinal polypeptide (VIP), and ATP, causing relaxation. The resultant forces propel the bolus in an antegrado direction. As the bolus moves, it triggers similar local peristaltic reflexes at successive sites along the gut. The symbol

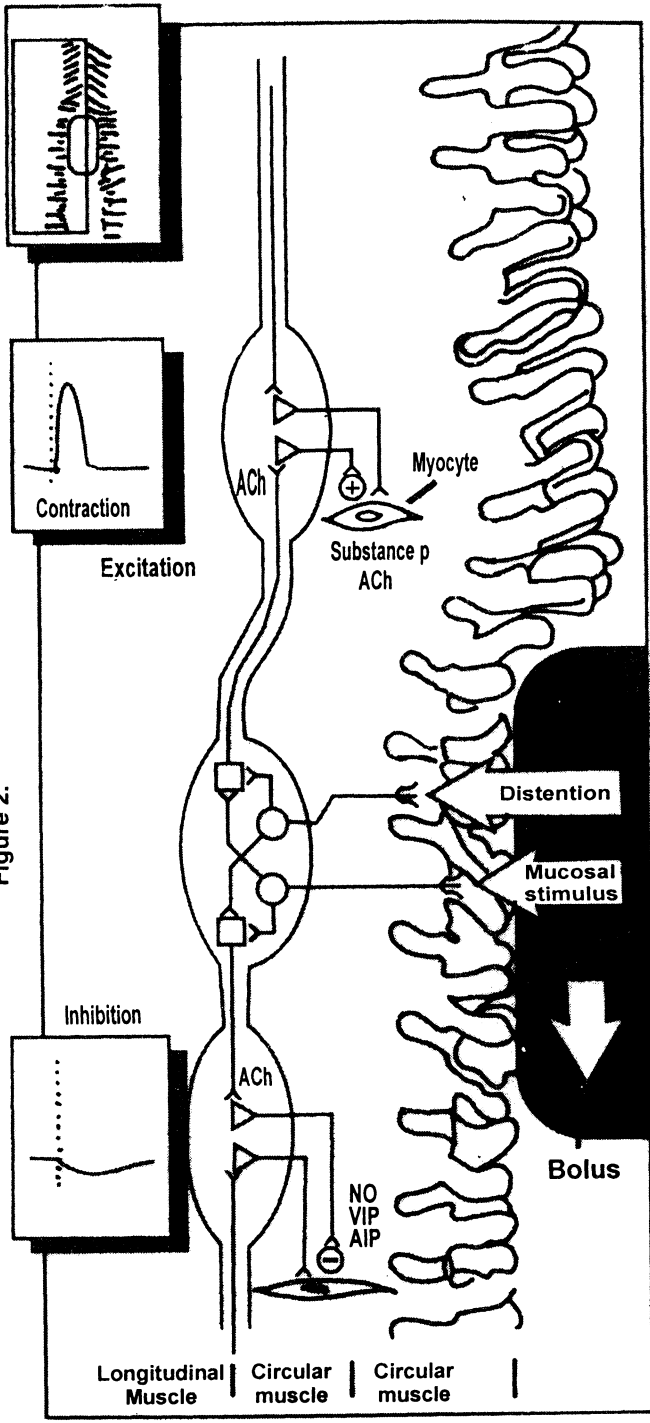


Figure 2.

After Goel and Hirano 1996.

ꭍꭍ represents afferent-nerve endings, # efferent-nerve endings, the plus sign excitatory influence, and the minus sign inhibitory influence." (After Goel and Hirono, 1996)

NĀSĀ ŚĀRĪRA

Nasya or *Śirovirecana* is one of the *Pañca Karma* procedures enlisted by all Classic Texts. Nasya is given through the *Nāsā* or the nose so as to help in purification or evacuation of the head. Head being the seat of brain and nose being the pertinent opening the Classic statement—*'Nāsā hi Śiraso Dvāram'* is quite appropriate. Nose are the portals of Head. Thus the nose and the pair of nostrils are the most vital apertures of the body nearest to the brain. Accordingly *Nasya* is the simplest but most vital therapeutic intervention in *Pañca Karma*. A *Pañca Karma* Therapist is expected to have good knowledge of the Anatomy and Physiology of the nose, nasal sinuses and related structures including neural and vascular supplies besides the possible impact of *Nasya Karma* on the local parts and the brain.

The nasal cavity is divided sagitally by the nasal septum, has opening on the face through the nares and posteriorly continue with the nasopharynx through the nasal apertures. The nares are ellipsoid or piriform. Each half of the nasal cavity has a floor, roof and medial septal wall. The nasal cavity is lined by nasal mucosa except its vestibules continuous with the nasopharyngeal mucosa through posterior nasal apertures and with the conjunctiva through the nasolacrymal duct and also with the mucosae of the sphenoidal, ethmoidal, frontal and maxillary sinuses through their openings.

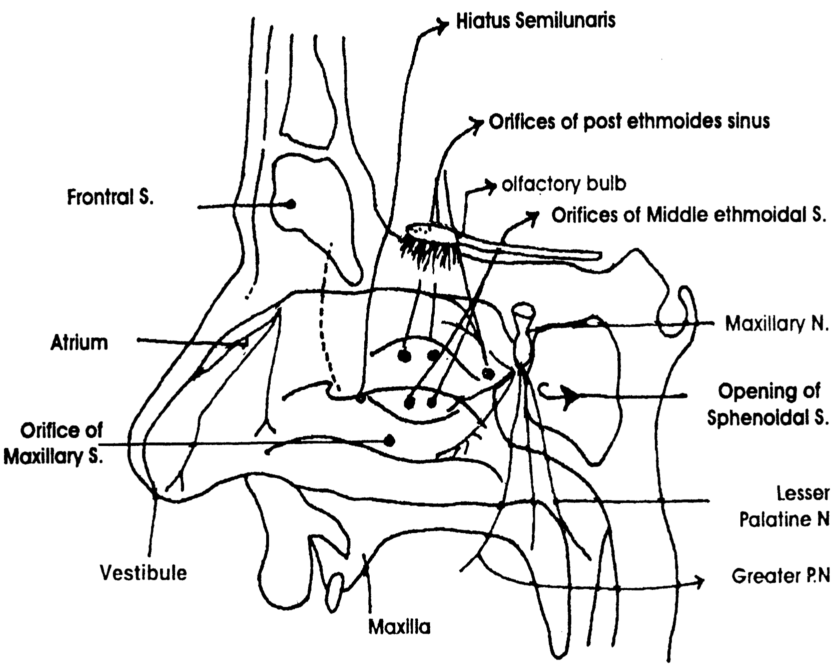
The frontal, ethmoidal, sphenoidal and maxillary sinuses vary in size and form in different subjects. Their mucosa is continuous with the nasal cavity. Mucus is secreted by glands of the mucosa and is swept into the nose through the apertures of the sinuses by Cilia. The functions of the sinuses are uncertain, they lighten the skull and add resonance to the voice. It is more probable that sinuses are manifestations of an unusual growth pattern in the bones. Most sinuses are rudimentary or absent at birth.

The olfactory epithelium is considerably thicker than the adjacent nasal epithelium and is pseudostratified sensory in type.

It contains three principal types of cell, olfactory receptors, supporting cells and basal cells.

The olfactory glands (Bowmans) are branched tubular structures beneath the olfactory epithelium, on to whose surface they secrete through narrow vertical ducts. Their secretory acini have cells with basal nuclei and granular cytoplasm containing dense secretory vesicles. Their secretions are reported to contain enzymes in some mammals (acid phosphatase esterase). Since this fluid forms the environment of the receptor endings, it may aid the diffusion of odoriferous substances from the air to the olfactory receptors and regulate the passage of ions to and from sensory cells during electrical activity. It may also by bactericidal.

The nasal cavity and the paranasal sinuses are richly supplied with nerves, arteries, veins and lymphatics which might be mediating the impact of *Nasya Karma* besides the role of mucosal system and the membrane function.



THE LOCOMOTOR SYSTEM

In addition to the consideration of visceral organs, vital points of the body and membrane system, a *Pañca Karma Therapist* has to be well versed with the structure and function of locomotor system specially, joints and muscles and their innervations as well as vascular and lymphatic supplies.

For instance while executing the process of *Abhyaṅga* and massage the following are important considerations to determine the degree of pressure and direction of the massage and use of the type of massage media and medication.

1. Consideration of the origin and insertion of muscles.

2. Direction of the Flow of Circulation of blood.

3. Direction of Lymphatic drainage as well as the degree of adiposity.

4. The joint assembly including the synovium, bony ends, ligaments and tendons around the joints.

5. Nerve supply to the part under treatment.

6. Direction of hairfollicles and hairs on the skin.

While massaging the extremeties and other somatic parts of the body the massagist must take into account the degree and direction of pressure of massage. He must appreciate that if he is directing the pressure from periphery towards the Centre i.e. towards the heart, this will augment venous return and if the procedure is in reverse order the net effect will be in reverse order. Such precautions are important in many Clinical situations. For example in a case of myocardial insufficiency continued u-pward (periphery to centre) massage may aggravate congestive cardiac failure. Hence a therapist has to take full precaution of safegaurding the haemodynamics of the part under treatment. Similar care is needed for lymphatic system too.

The degree of adipose tissue available in a particular region is another consideration in this context. The origin and insertion of different muscles should be accounted while deciding the direction of massages of different kinds.

THE MOLECULAR BASIS OF SAṂŚODHANA EFFECT

Āyurveda propounds a fundamental approach to therapeutics by introducing the unique concept of *Saṁśodhana.* The human body is comprised of innumerable channels both gross and subtle to facilitate the flow of nutrients and excretion of metabolites. Unless these channels i.e. the *srotāṁsi* are clean and dynamic it will not be possible to maintain the normal homeostasis i.e. the *dhātu sāmya.* Thus Āyurveda introduces the concept of *Saṁśodhana* which forms the foundation of Āyurvedic therapeutics.

Srotas in Āyurveda refers to the gross channels starting from the hair roots, gastrointestinal tract (GIT), blood vessels, lymphatics etc. up to the minutest ones like the pores of cell membranes and similar structures at subcellular levels. The *Saṁśodhana* measures, utilising oleation, heat application, massage, emesis, purgation, ememata etc. as working tools, influence the *srotāṁsi* at all levels through a variety of mechanisms besides generating suitable pressure gradients. A brief discussion on its possible biological mechanism is given below.

The approach of Āyurveda to the treatment of a disease consists of two major procedures *Saṁśodhana* and *Saṁśamana.* Among them *Saṁśodhana* is claimed to be a radical therapy and is supposed to eliminate the vitiated *Doṣas* causing disharmony in the body. It is also said that the diseases treated by *Saṁśodhana* therapy never relapse again. Besides its application in therapeutics *Saṁśodhana* is also essential for the induction of *Rasāyana* therapy which is done for the rehabilitation and rejuvenation of the body. Furthermore during outbreaks of epidemics and pandemics *Saṁśodhana* of the body is done by *Pañcakarma* both for the prevention as well as for the treatment of diseases. *Pañcakarma* is also said to be essential for the maintenance of health in relation to the circadian and circannual variations of the *Doṣas.*

The *Pañcakarma* therapy is entirely based upon the fundamental principles of Āyurveda and each of its steps, which constitute certain specific measures, are applied after due consideration of the type of *Doṣa* disturbances, indications and contraindications.

The great emphasis which is put on the utility of *Pañcakarma* and the successful practice of these measures in some parts of our country stresses the need for exploration and evaluation of this whole phenomenon in terms of recent developments in biological sciences like physiology, biochemistry, molecular biology and medicine. The scientific basis and rationale of this specialized therapeutic measure can only be established by working out the biological events caused by the application of these measures in living organisms.

THE SROTĀṂSI : THEIR MODERN CORRELATES

Āyurveda considers the body to be an aggregation of *srotāṁsi*. These have been described as the channels from where something (as the three basic physiological entities namely *vāta, pitta* and *kapha* or the formed and unformed tissue substances which are responsible for the growth and nutrition of different *dhātus*) can pass. If so far as these *Srotāṁsi* remain unaltered, the body remains healthy.

Srotāṁsi are considered to be innumerable, invisible to the naked eye and according to the description in Āyurvedic texts all spaces and all channels either gross or subtle which provide a passage for metabolites are *Srotāṃsi*. Any alteration in the *Srotāṁsi* causes a disturbance in the transportion of different metabolites leading to an altered formation of body tissues *(dhātus)* and an altered removal of *Malas* thus causing ailments. Grossly, these *Srotaṁsi* are classified into thirteen major systems with their corresponding channels. Visualising the *srotāṁsi* from the grossest to the subtlest levels simultaneously is a way to highlight their importance in terms of pathogenesis.

This account of *srotāṃsi* can well be explained and defined by the growing knowledge of cell biology and physiology. Grossly, all the major systems of the body, related organs and their channels are considered to be *stotāṁsi*. Further, the blood vessels, lymphatics, sinusoids, capillaries and intercellular spaces can also be called *Srotāṁsi*. The *Srotāmsi* are classically described as *Lakṣa-alakṣyanam* i.e. millions and invisibles.

After so many years of patient work in the field of biological sciences channels and passages at the cellular level have now been discovered. Several voltage gated channels have been

identified in cell membranes during the past few decades. These are responsible for the transport of ions in and out of the cells. Cells are also interconnected by junctional channels and they share a common pool of small metabolites that pass freely from one cell to another. In metabolically active cells like the epithelial cells, cardiac cells and liver cells these communication channels are more pronounced. These cells are inter-connected by plaque like contacts at several places, also called gap junctions or nexus. Here the adjacent cell membranes are opposed by a gap of only 2-4 nm.

The unit structure of the gap junction is termed connexion and is made of a hollow cylinder composed of six sub units. Thus cylinder spans the bilayer of the two opposed membranes by 2-4 nm. and provides communication between cells through the hollow channels. The size of the gap junction has been estimated by electron microscopy, electrical measurements and diffusion of tracer elements. It is of a dia of 1 nm. These junctional communications allow a free passage of electrical current, ions and small molecules as nucleotides, sugars, vitamins and other metabolites.

Coming to details, the nucleus of the cell is also composed of several minute pores in its membrane by which the cytoplasm and nucleoplasm are inter-related. What is even more important is that the lipid soluble substances can traverse directly through the cell membrane because lipid is a major component of all the cell membranes and provides a free entry of lipid and lipid soluble substances. So logically the whole body could be seen as a composite of passages through which metabolites are directed from the gross to subtle levels and vice-versa *(dhātu sāmya)*.

SAṀŚODHANA : ITS IMPORTANCE

Any alteration in the functioning of these passages or obstruction will lead to the maltransportation of metabolites to different parts when required for nutrition or excretion. This disturbance thus ultimately leads to the genesis of disease. *Saṁśodhana* therapy helps to clean the channels and to rejuvenate them for ensuring a proper transportation of the metabolites. *Saṁśodhana* aims at recouping the harmony of diseased passages and retaining the harmony in normal states

Instead of cleaning the body alone, as per the popular belief, *Saṁśodhana* works at maintaining the normalcy of the body and its components also. Here it is worthwhile to refer to the root meaning of *Saṁśodhana. Saṃśodhana* stands for rectification and is more vital and complicated than *śodhana* (merely a physical or chemical purification) which is less complicated.

Saṁśodhana consists of a number of physico-physiological measures and *Pañcakarma* is a classically formulated *Saṁśodhana* regimen. It has three major steps, namely : *pūrva karma* or preparatory measures, *pradhāna karma* or main therapeutic part and *paścāta karma* or the post therapeutic measure with special reference to diet. The preparatory part of *Saṁśodhana* consists of *snehana* (oleation) followed by *svedana* (heat generation or heat application). These preparatory measures are important components of the *Saṁśodhana* regimen and are essential before the commencement of the *pradhāna karmas* namely : *vamana* (emesis), *virecana* (purgaton), *Bạsti* (enemata), *śiro virecana* (nasal application) and *rakta mokṣaṇa* (blood letting).

Snehana is the external or internal application of oily substances by means of massage or ingestion. *Snehana* is said to cause smoothening, displacement, softening and liquefaction of vitiated *doṣas* and so causes the elimination of vitiated *doṣas*. Sticky and non separable vitiated *doṣas* are made non sticky and separate by *snehana*. The process of external application of *snehas* (in the form of massage), besides acting like a massage through the application of pressure for nervous stimulation, also causes the fat to permeate the body and it is this permeated fat which is responsible for most of the benefits of *snehana*.

To precisely delineate the role of *snehana* and *svedana* it is essential to have a look at the dynamism of cells and their components.

CELL MEMBRANES : THEIR STRUCTURE & FUNCTION

According to the accepted model for cell membrane structure i.e. the fluid mosaic model proposed by Singer and Nicolson (1972), the following postulations are proposed to explain the dynamism of cell membranes :

1. Lipid and integral proteins are disposed in a kind of mosaic arrangement in the cell membrane.

2. Biological membranes are quasi fluid structures in which both the lipids and the integral proteins are able to perform translational movements within the bilayer.

3. Integral proteins of the cell membrane are intercalated into an almost continuous lipid layer.

This view is in contrast to the earlier Robertson's Unit Membrane Model (1953) with a protein-lipid-protein trilaminar concept where lipid was thought to be sandwiched in between two layers of protein. Robertson's model was a fixed model and was unable to explain the real dynamicity of biological membranes. The Fluid Mosaic Model explains in contrast, the membrane fluidity with the fact that both the proteins and lipid molecules in cell membranes have the freedom of different movements within the bilayer. Lipid molecules have an inherent capability of movement and this movement is directly proportional to the temperature. Unsaturated fatty acids have a lower melting point in comparision to saturated ones and thus melt at comparatively lower temperatures. This is why cell membrane lipids remain fluid and thus dynamic, at physiological temperatures. This model proposes a dynamic nature for the cell membrane where the integral protein sub-units float freely like icebergs in a sea of phospholipids.

Studies with nuclear magnetic resonance (NMR) and electron spin resonance (ESR) have clearly indicated that the lipid bilayer has dynamic properties such as flexion or rapid internal motion within the lipid molecule, lateral diffusion, flip-flop motion or transfer of a lipid molecule from one side of the bilayer to the other and rotation around its axis. All these motional properties are temperature dependent and can be increased many fold by heat application.

SAṀŚODHANA : MODE OF ACTION

(A) Pūrva karma

In the preparatory part of *Saṁśodhana* lipoid substances are administered subcutaneously by the application of massage or orally as pure lipoid substances or in the form of specific food

preparations to make them more palatable. In the preparatory part it is essential to follow *snehana* by *svedana* or the administered lipoid substances both externally and internally. During external oleation *svedana* is usually done by applying dry or wet heat in the form of fomentation and during internal application it is usually done by ingesting hot water after the intake of lipid substances.

In the texts some other methods for generating heat are also described. These are mainly different forms of physical exercises which raise the basal metabolic rate (BMR) of the body and thus generate heat.

Here it can also be pointed out that four main varieties of lipoid substance namely *ghṛt* (solid oil), *taila* (oil), *vasā* (lard) and *majjā* (bone marrow) are specially mentioned in Āyurvedic literature for the purpose of *snehana*. All of them but one *(taila)* are of animal origin and so a possibility of similarity in chemical and physiological nature to that of the cell membrane cannot be ruled out. This thus intensifies the penetration of *snehana* substances through the cell membrane. Cell membranes act as a barrier to the passage of water soluble molecules but provide free passage to lipids and lipid soluble substances. Several experiments have been done in different parts of the world to demonstrate the rapid diffusion of lipid soluble substances through cell membranes and the dependency of the rate of diffusion on solubility in lipids has also been proved. By observing these facts certain speculations can be drawn pertaining to the mode of action of preparatory measures in *Saṁśodhana*. These are :

1. Lipoid substances which are similar to the cell membrane lipids, get directly incorporated into the cell membrane (as the cell membrane is a dynamic structure, this incorporation increases its surface area).

2. Some of the lipids and lipid soluble subsatnces directly reach the cytoplasm through the cell membrane.

3. Application of heat after the *snehana* causes the generation of a temperature gradient across the cell membrane. Besides facilitating the diffusion of lipid substances through the cell membrane (by increasing its dynamicity) this plays key role in

the formation of lipoid vesicles from the drop outs in the membrane in areas of low temperature. This causes an expansion in the cell volume as well as the surface area. but as the cell is not an isolated structure and is bound by other cells around, it is not allowed to expand freely especially in the peripheral direction. At the time of *snehanạ* and *svedana* as every nearby cell expands peripherally the blebbing of the cell membrane is restricted tangentially. The only possibility that remains is a blebbing of the cell membrane inside. The temperature gradient and the pressure gradient caused by *svedana* further helps blebs detached from the cell membrane flow in a direction of low pressure gradient, get attached to some other cell organelle or the other side's membrane and remain there till a critical surface area is reached. This membrane then blebs out and spreads further. The whole phenomenon of the dropping of cell membrane vesicles and their incorporation into other membranous structures was described as 'membrane flow hypothesis' by Palade (1959).

Now, utilising the concept of *srotāṁsi* of Āyurveda it can be said that it is in this way that the *sneha* reaches deep into the body tissues, causing partial rejuvenation of cell organelles and cell membranes by replacing their older components with new ones and extracting the lipid soluble waste products from the cells to drain them into the blood stream. So in this way *snehana* causes the liquefaction, displacement, softening and smoothening of vitiated *doṣas* (here can be referred to as stagnated metabolic wastes) and makes their elimination possible. The blood transports these wastes to specific areas like liver, lungs and kidney from where they can be eliminated. This phenomenon again highlights one of the most precious principles of Āyurvedic management i.e. elimination of vitiated *doṣas* by dragging them to the major channels from the periphery i.e. from *śākhā* to *koṣṭha*.

(B) Pradhāna Karma

Now comes the main part of *Saṁśodhana karma* i.e. *vamana* (emesis), *virecana* (purgation), *śiro virecana* (snuffing), *nirūha* and *anuvāsana vasti* (two types of enemata). It can well be observed that these are the processes of elimination of wastes from the major channels of the body namely the GIT and the upper respiratory tract.

The processes of these acts are also very vividly described in the ancient Āyurvedic literature. Specific methodology, indications, contraindications, suitability of season, part of the day and direction and the signs and symptoms of a properly performed act are all well described.

Vamana is performed after three to seven days of preparatory measures and is induced by certain emetics like hypertonic saline water and some of the herbal preparations of this nature. *Madanphala* (Randia spinosa) is one among them and is commonly used. The process of emesis is central as well as peripheral by the distension of the stomach by saline water ingested in large amounts. During the initial bouts of emesis the contents of the upper gastrointestinal tract up to the pylorus alone come out. Repeated emesis creates a negative pressure gradient towards the lumen of the upper GIT while hypertonic saline water causes towards the lumen of the upper GIT while hypertonic saline water causes a positive osmotic gradient towards the lumen. Both of them cause a forced extraction of easily detachable substances from the cells of the lumen and those containing waste metabolites situated nearby peripherally. In this way excessive lipid which was consumed during the preparatory days blebs into the lumen with water soluble substances which are excreted out due to the osmotic gradient. Repeated emesis also causes the generation of a negative pressure gradient up to the second part of the duodenum where the bile duct and pancreatic duct open into the ampulla of vator. This negative pressure gradient causes forced expulsion of bile from the gall bladder and so eliminates some of the wastes with bile which have been transported to the liver via the blood stream during the preparatory part of *Saṁśodhana.*

Vamana acts in other ways also. The osmotic gradient generated by the hypertonic saline solution and the physical insult done to the luminal cells during the process causes the loss of some of the integral proteins on the inner cell surface and other components of the cell. Some old and degenerated cells are also shed into the lumen due to this osmotic shock. This loss stimulates the cell machinery to recoup. This leads to a pacified anabolism in the luminal cells, which means more effective absorption through the GIT.

A similar process may be assumed to occur in *virecana* and *śirovirecana.*

In a nut shell it can be said that every component in the body, right upto the micro level, is connected to the rest of the body through a number of *srotāṁsi* which are vital for the being of its individual components. *Saṁśodhana* procedures make these communications effective, vital and prompt and thus make the tissues and ultimately the whole body more vital and viable.

The *Saṁśodhana* effect of *Pañcakarma* is a complex phenomenon and the present discussion proposes certain hypothesis about the possible mechanisms involved. There may be many more ways and factors contributing to its complexity which are still waiting to be deciphered. Let us hope for a better understanding of *Pañcakarma* in the near future, so that this age old but still worthy therapeutic measure can be fully utilized for the well-being of suffering humanity.

THE CLASSICAL SIX-FOLD THERAPY (THE ṢAḌ-UPAKRAMAS)

Caraka encompasses the therapeutics into six categories popularly termed as the *Ṣaṭ-upakramas*[1] namely 1. *Laṅghana* (Depleting), 2. *Bṛṃhaṇa* (Anabolising), 3. *Rūkṣaṇa* (Dehydrating), 4. *Snehana* (oleation), 5. *Svedana* (Sudation) and 6. *Stambhana* (Retaining). This is the generic classification of all possible actions that a physician takes to treat a disease in the same way as a surgeon acts through the *Aṣṭavidha Karma* (Eight fold surgical measures) to manage a surgical disease as described by Suśruta namely-1. *Chedana* (Excision), 2. *Bhedana* (Incision), 3. *Lekhana* (Currattage), 4. *Eṣaṇa* (Exploration), 5. *Āharaṇa* (Extraction), 6. *Bhedana* (Puncturing), 7. *Visrāvaṇa* (Blood letting), and 8. *Sīvana* (Suturing).

In the present context while dealing with the popular *Pañca Karma* Therapy, it appears essential to bring to the notice of the scholars; the classical concept of *Ṣaḍupakramas* described by Caraka, which not only encorporates the *Pañca Karma* measures but encompasses the entire therapeutic strategy and philosophy. Caraka claims that by appropriate use of these *Ṣaṭ-Upakramas* all *Sādhya* category of ailments can be cured. These are the *Siddha* or successful measures. They should be used in consideration of the individual and environmental factors. An Ayurvedic physician is expected to know indepth the Science and Art of these six *Upakramas*. Caraka states that in principles there is nothing beyond these six-fold methods for the treatment of a disease in the same way as there is nothing more important than the *Tridoṣas* in the genesis of a disease-*'Ṣaṭtvaṁ tu nāti Vartante Tritvaṁ Vātādayo Yathā'* (Ca. Sū. 22:43). All measures and methods of treatment including the *Pañca Karmas* are incorporated in these *Ṣaḍupakramas*.

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1. लङ्घनं बृंहणं काले रूक्षणं स्नेहनं तथा।
स्वेदनं स्तम्भनं चैव जानीते यः स वै भिषक्॥ (च. सू. २२ : ४)

As rightly emphasised by Chaturvedi (1971) the main outlook of treatment are : 1. The elimination of morbid factors which cause the diseases, 2. The treatment antagonistic to the disease and 3. The treatment that aims at the elimination of the cause of the disease. In classical meaning too, *Cikitsā*[2] is the therapy which contributes to the maintenance of the equilibrium of *Dhātus*. Essentially therapy has two-fold[3] objectives i.e. I. *Swasthasyorjaskara* i.e. preservation and promotion of health in a healthy individual such as the *Rasāyana, Vājikaraṇa, Yogābhyāsa* etc., and 2. *Ārtasya Roganut* i.e. cure of the diseases in the ailing and afflicted which is achieved by different kinds of *Saṁśodhana, Saṁśamana* and *Nidāna Parivarjana* schedules. As also mentioned earlier the curative medicine in general has been classified in three categories[4] viz., 1. *Daiva Vyapāsraya*, 2. *Yukti Vyapāsraya* and 3. *Sattvāvajaya*. Among these the *Daiva Vyapāsraya* and *Sattvāvajaya* measures may not come directly under *Ṣaṭ-Upakrama* but the *Yukti Vyapāsraya Cikitsā* essentially operates through these six-fold measures which are classified in this context in three categories namely[5] (i) *Antaḥ Parimārjana* (Internal purification by *Pañca Karma* and other *Śodhana* measures), (ii) *Vahiḥ Parimārjana* (External purification by *Abhyaṅga, Sweda, Pradeha, Pariṣeka* and similar other physiotherapeutic procedures), (iii) *Śastra Praṇidhāna* (Surgical Interference) such as *Chedana, Bhedana, Vyadhana, Dāraṇa, Lekhana, Utpāṭana, Pracchāna, Sīvana. Eṣaṇa, Kṣāra, Jalauka* etc. (Ca. Sū. 11:64).

The *Antaḥ Parimārjana* and *Vahiḥparimārjana* measures of *Yukti Vyapāsraya* are the part and parcel of the *Ṣaḍūpakramas*

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2. याभि: क्रियाभिर्जायन्ते शरीरे धातव: समा: ।
सा चिकित्सा विकाराणां कर्मतद्भिषजां स्मृतम् ॥
(CS. Su. 16/34)

3. भेषजं द्विविधं च तत् ।
स्वस्थस्योर्जस्करं किञ्चित् किंचिदार्तस्य रोगनुत् ॥ (CS. Ci. 1/4)

4. त्रिविधमौषधमिति-दैवव्यापाश्रयं, युक्तिव्यपाश्रयं, सत्त्वावजयश्च ।
(CS. Su. 11/54)

5. शरीरदोषप्रकोपे खलु शरीरमेवाश्रित्य,
प्रायशस्त्रिविधमौषधमिच्छन्ति-
अन्त:परिमार्जनं, बहि:परिमार्जनं, शस्त्रप्रणिधानं चेति । (CS. Su. 11/55)

i.e. the six-fold therapeutics. And thus these six-fold measures appear to be the basic therapeutic measures in the field of *Kāyachikitsā*. The Suśruta's description of *Saṁśodhana, Saṁśamana, Āhāra* and *Ācāra* also refers to such measures which are directly or indirectly encompassed by the fundamental *Ṣaḍūpakramas*. Similarly Vāgbhaṭṭa's categorisation of *Cikitsā* into *Santarpaṇa* and *Apatarpaṇa* or *Bṛṁhaṇa* and *Laṅghana* may also be incorporated into the same six-fold therapy. As also agreed upon by earlier workers, under *Laṅghana* are included the main measures, *Rūkṣaṇa* and *Svedana. Snehana* and *Stambhana* are basically *Bṛṃhaṇa* measures. *Laṅghana* appears to have two aspects 1. *Śodhana*, 2. *Śamana*; the *Śodhana* aspect of *Laṅghana* is designed to eliminate vitiated *Doṣas* from the body by *Vasti (Nirūha), Vamana, Virecana, Śirovirecana* and *Raktamokṣaṇa*. *Anuvāsana Vasti* is excluded from *Laṅghana* as it affords *Bṛṁhaṇa* effect due to its *Sneha guṇa*. The *Śamana* aspect of *Laṅghana* comprises of seven measures namely-*Pācana, Dīpana, Upavāsa* (control of hunger), *Pipāsā* (Thirst), *Vyāyāma* (exercise), *Māruta* (Air) and *Ātapa* (Sun). The *Śodhana* measures included under *Laṅghana* component of *Ṣaḍūpakramas* are the principal measures of popular *Pañca karma* Therapy.

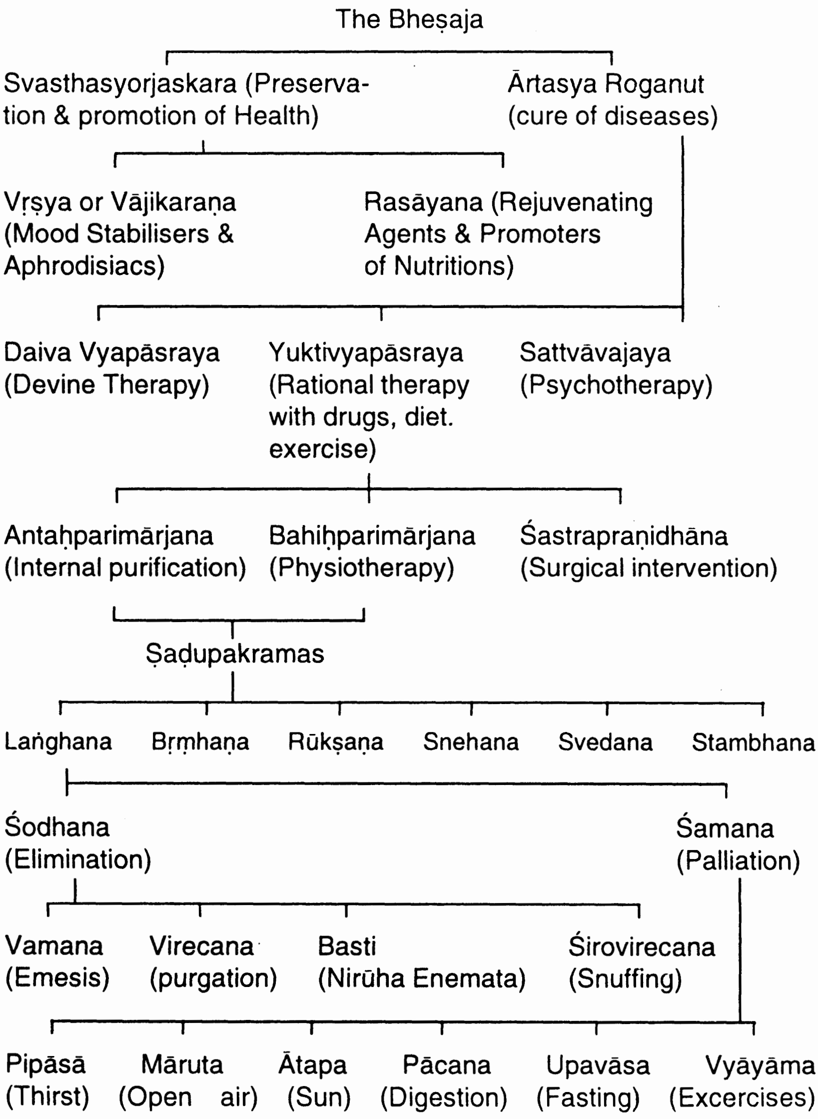
The popular *Siddhānta-Catuṣṭaya* (Four-Fold Doctrine) enunciated by Suśruta and commented upon by *Ḍalhaṇa* on which the classical Ayurvedic treatment revolves also operates through *Ṣaḍūpakramas*. This would be obvious from the following description of the Four-Fold[6] doctrine. In this context Suśruta says that 1. The *Doṣas* which are depleted (Kṣiṇāḥ) should be restored *(Bṛṃhaṇiyāḥ)* by *Bṛṃhaṇa* measures, 2. The *Doṣas* which are vitiated *(Kupitāḥ)* should be palliated *(Praśamayitavyāḥ)* by specific therapy i.e. by *Saṁśodhana* measures in case of *Caya-Pūrvaka Prakopa* and by *Saṁśamana* measures in case of *Acaya-Pūrvaka Prakopa*; 3. The *Doṣas* which are aggravated (Vṛddhāh) shculd be eliminated *(Nirhartavyāḥ)* applying suitable *Ṣaṁśamana* measures in case of *Saṃhatirupa Vṛddhi* and *Saṁśodhana* in case of *Vilayanarūpa*

6. दोषाः क्षीणा बृंहयितव्याः, कुपिताः प्रशमयितव्याः;
वृद्धा निर्हर्तव्याः, समाः परिपाल्या इति सिद्धान्तः ॥ (SS. Ci 33/3)

Vṛddhiḥ and 4. The *Doṣas* which are in the state of equilibrium *(Samāḥ)* should be preserved *(Paripālyāḥ)* by suitable *Swasthavṛtta* measures.

Thus it appears that *Ṣaḍūpakramas* described in the

Cikitsā (Therapeutic Measures)



Ayurvedic classics form the basic approach of medical treatment and all other measures described elsewhere are directly or indirectly incorporated under this broad doctrine of treatment categories. Hence while dealing with the popular *Pañca Karma* Therapy it would be relevant to draw the attention of scholars to this classical thinking. For the benefit of readers the *Ṣaḍūpakrama* as described in Caraka Saṁhitā Sūtra Sthāna Chapter 22 namely Laṅghana-Bṛṃhaṇīya Adhyāya is being summarised hereunder :

1. LANGHANA (DEPLETING) :

All those measures which induce *Laghutā* (lightness) in the body are called *Laṅghana*[7] *Lāghavakaraṇāta* (Ca. Sū. 22:7). It is important to note that *Laṅghana* is not only *Upavāsa* (fasting), though fasting is one of the *Laṅghana* measures. All *laghu*[8] (light), *Uṣṇa* (hot), *Tikṣṇa* (Sharp), Viśad (non-slimy), *Rūkṣa* (coarse), *Sūkṣma* (fine), *Khara* (rough), *Sara* (mobile) and *Kaṭhina* (hard) *dravyas* are ordinarily *Laṅghana* in their effect. As also mentioned earlier *Laṅghana* is not only fasting. It consists of (1-4) the Four[9] types of *Saṁśodhanas* (The *Pañca Karma* minus *Anuvāsana, Anuvāsana* being *Bṛṃhaṇa* in its effect), *Pipāsā* (avoid drinking water), *Māruta* (open air treatment), *Ātapa* (sun), *Pācana* (digestants), *Upavāsa* (fasting), *Vyāyāma* (Exercise) (Ca. Sū. 22:16). Thus *Laṅghana* has two aspects-(a) *Laṅghana* by *Śodhana* (1-4), (b) *Laṅghana* by *Saṃśamana* (5-10).

INDICATIONS OF LANGHANA BY ŚODHANA[10] :

(Ca. Sū. 22/19)

Laṅghana through *Saṃśodhana* is indicated in (1) Persons with excessive aggravation of *Kapha, Pitta, Rakta* and *Mala*, (2) Persons with minor aggravation of *Vāyu* alongwith other *Doṣas*. It

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7. यत्किंचिल्लाघवकरं देहे तल्लङ्घनं स्मृतम्। (CS. Su. 22/9)

8. लघूष्णतीक्ष्णविशदं रूक्षं सूक्ष्मं खरं सरम्।
कठिनं चैव यद् द्रव्यं प्रायस्तल्लङ्घनं स्मृतम्॥ (CS. Su. 22/12)

9. चतुष्प्रकारा संशुद्धिः पिपासा मारुतातपौ।
पाचनान्युपवासश्च व्यायामश्चेति लङ्घनम्॥ (CS. Su. 22/18)

10. प्रभूतश्लेष्मपित्तास्रमलाः संसृष्टमारुताः।
बृहच्छरीरा बलिनो लङ्घनीया विशुद्धिभिः॥ (CS. Su. 22/19)

is contraindicated if the aggravation of *Vāyu* is predominant in a case of combined vitiation or if there is a pure *Vātika* disease, (3) Persons with heavy body and good strength.

INDICATIONS OF LANGHANA BY SAMŚAMANA :

1. *Laṅghana* through *Pācana*[11] is indicated in persons suffering from *Kapha-Pittaja* diseases with medium severity *(Madhya Bala)* such as vomiting, diarrhoea, heart disease, gastroenteritis *(Visūcikā), Alasaka,* Fever, Constipation, heaviness in the body, eructations, *Hṛllāsa* (nausea), anorexia.

2. *Laṅghana* through *Upavāsa* (Fasting) and *Pipāsā*[12] (control of thirst) is indicated in the same conditions as mentioned above to be treated by *Pācana*, if these disease states are of minimal severity *(Alpa Bala gadāḥ)*.

3. *Laṅghana* through *Vyāyāma*[13] (exercise), *Ātapa* (sun) and *Māruta* (open air) treatment is indicated in diseases of medium and minimal severity afflicting persons with good strength.

GENERAL INDICATIONS OF LAṄGHANA[14] :

1. *Laṅghana* is indicated in all seasons in case of *Kuṣṭha* or skin diseases, *Prameha* or diabetes, those who are excessively oleated, those who are suffering from *Abhiṣyanda*, obesity.

2. *Laṅghana* is indicated only in *Śiśira* ṛtu in case of *Vātika* diseases because *Śiśira* is the *Sañcaya Kāla* of *Kapha* hence in this season even a *Vāta Roga* can be subjected to *Laṅghana* therapy.

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11. येषां मध्यबला रोगाः कफपित्तसमुत्थिताः ।
वम्यतीसारहृद्रोगविसूच्यलसकज्वराः ॥
विबन्धगौरवोद्गारहृल्लासारोचकादयः ।
पाचनैस्तान् भिषक् प्राज्ञः प्रायेणादावुपाचरेत् ॥ (CS. Su. 22/20-21)

12. एत एव यथोद्दिष्टा येषामल्पबला गदाः ।
पिपासानिग्रहैस्तेषामुपवासैश्च ताञ्जयेत् ॥ (CS. Su. 22/22)

13. रोगाञ्जयेन्मध्यबलान् व्यायामातपमारुतैः ।
बलिनां किं पुनर्येषां रोगाणामवरं बलम् ॥ (CS. Su. 22/23)

14. त्वग्दोषिणां प्रमीढानां स्निग्धाभिष्यन्दिबृंहिणाम् ।
शिशिरे लङ्घनं शस्तमपि वातविकारिणाम् ॥ (CS. Su. 22/24)

SIGNS OF ADEQUATE LAṄGHANA *(SAMYAKA YOGA)*[15] :

1. Proper release of faeces, flatus and urine, 2. lightness in the body, 3. Feeling of lightness in the chest, 4. Free eructations, 5. Feeling of lightness in the throat, 6. Purity of oral cavity, 7. Disappearance of *Tandrā* (drowsiness) and *Klama* (fatigue), 8. Free perspiration, 9. Liking for food, 10. Appearance of Appetite and thirst, and 11. Feeling of internal wellbeing and happiness.

SIGNS OF EXCESSIVE LAṄGHANA[16] *(ATIYOGA)* :

1. *Parvabheda* (Joint pain), 2. *Aṅgamarda* (bodyache), 3. Cough, 4. Dryness of mouth, 5. Absence of appetite, 6. Anorexia, 7. Thirst, 8. Weaker sense of hearing and vision, 9. Unstability of mind, 10. Excessive *Urdhvavāta*, 11. Feeling of entering into a dark place, 12. Depletion of body, digestive power and physical strength.

2. *BṚṂHAṆA* (ANABOLISING)

All those measures which anabolise and increase the weight of the body are called *Bṛṃhaṇa*[17]-*'Bṛhattvaṁ yaccharīrasya'* (Ca. Sū. 22:7). All *Guru, Śīta, Mṛdu, Snigdha, Vahala, Sthūla, Picchila, Manda, Sthira* and *Ślakṣṇa* suhstances are generally *Bṛṁhaṇa* in their effect[18]. All these properties are contradictory to *Laṅghana. Māṃsa* has been considered the best among the *Bṛṃhaṇa* agents-*'Māṃsaṁ Briṃhaṇīyānām'* (Ca. Sū.25).

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15. वातमूत्रपुरीषाणां विसर्गे गात्रलाघवे।
हृदयोद्गारकण्ठास्यशुद्धौ तन्द्राक्लमे गते॥
स्वेदे जाते रुचौ चैव क्षुत्पिपासासहोदये।
कृतं लङ्घनमादेश्यं निर्व्यथे चान्तरात्मनि॥ (CS. Su. 22/34-35)

16. पर्वभेदोऽङ्गमर्दश्च कासः शोषो मुखस्य च।
क्षुत्प्रणाशोऽरुचिस्तृष्णा दौर्बल्यं श्रोत्रनेत्रयोः॥
मनसः संभ्रमोऽभीक्ष्णमूर्ध्ववातस्तमो हृदि।
देहाग्निबलनाशश्च लङ्घनेऽतिकृते भवेत्॥ (CS. Su. 22/36)

17. बृहत्त्वं यच्छरीरस्य जनयेत्तच्च बृंहणम्॥ (CS. Su. 22/10)

18. गुरु शीतं मृदु स्निग्धं बहलं स्थूलपिच्छिलम्।
प्रायो मन्दं स्थिरं श्लक्ष्णं द्रव्यं बृंहणमुच्यते॥ (CS. Su. 22/13)

THE INDICATIONS OF BṚMHAṆA[19] :

1. Those who are injured *(Kṣataḥ)* or those who are suffering from *Uraḥ Kṣata (Kṣiṇaḥ)*, 2. Those who are emaciated *(Kṛśaḥ)*, 3. the aged, 4. the weak, 5. those travelling excessively every day, 6. those involved in excessive sexual intercourse, 7. those addicted to alcohol.

The above mentioned category of persons should be given *Bṛṃhaṇa* in all seasons, while others should be given *Bṛṃhaṇa* only in *Gṛṣma ṛtu* because *Gṛṣma ṛtu* brings weakness in every body.

Ādavante Ca Dourbalyam Visargādānayornṛṇām'. CS. Su. 6/8.

Those persons who have become weak due to consumption[20], piles, malabsorption, and other chronic debilitating diseases should be given light meat juice of non-vegetarian animals (Ca. Sū. 22:27).

Snāna (bath), *Utsādana* (rubbing with oleus substances), *Svapna* (sleep), *Madhura Sneha Vasti* (oily enemata containing *Madhura* substances), sugar milk and *Ghṛta* are *Bṛṃhaṇa*[22] for all (Ca. Sū. 22, 96).

SIGNS OF ADEQUATE (SAMYAK) BṚMHAṆA[21] :

1. *Bala* (strength), 2. *Puṣṭi* (growth) and 3. Disappearance of emaciation; these are the signs of adequate *Bṛṃhaṇa*. (Ca. Sū.22 : 37).

SIGN OF EXCESSIVE BṚṂHAṆA[22] :

Increasing obesity *(Sthaulya)* is the manifestation of excessive *Bṛṃhaṇa* (Ca. Sū.22 : 37).

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19. क्षीणाः क्षताः कृशा वृद्धा दुर्बला नित्यमध्वगाः ।
स्त्रीमद्यनित्या ग्रीष्मे च बृंहणीया नराः स्मृताः ॥ (CS. Su. 22/26)

20. शोषार्शोग्रहणीदोषैर्व्याधिभिः कर्शिताश्च ये ।
तेषां क्रव्यादमांसानां बृंहणा लघवो रसाः ॥ (CS. Su. 22/27)

21. बलं पुष्ट्युपलम्भश्च कार्श्यदोषविवर्जनम् ।
लक्षणं बृंहिते, स्थौल्यमति चात्यर्थबृंहिते ॥ (CS. Su. 22/37)

22. स्नानमुत्सादनं स्वप्नो मधुराः स्नेहवस्तयः ।
शर्कराक्षीरसर्पींषि सर्वेषां विद्धि बृंहणम् ॥ (CS. Su. 22/28)

3. RUKṢAṆA (DEHYDRATING)

All materials and methods, which render the body *Rūkṣa*[23] (rough), *Khara* (coarse) and *Viśada* (free from sliminess) are called *Rūkṣaṇa*-(Ca. Sū. 22 : 8). All *Rūkṣa, Laghu, Khara, Tikṣṇa, Uṣṇa, Sthira Apicchila* and *Kaṭhina* substances are ordinarily *Rūkṣaṇa*[24] in effect. The fundamental difference between the *Laṅghana* and *Rūkṣaṇa* substances is due to the *Sara* and *Sthira guṇas*. The excessive consumption of *Kaṭu, Tikta* and *Kaṣāya* substances, excessive sexual intercourse; use of *Khali, Piṇyāka, Takra,* and *Madhu* cause *Rukṣaṇa* in the body[25].

INDICATIONS OF RUKṢAṆA[26] :

1. *Abhiṣyanda*, 2. Major diseases located at vital sites *(Marmastha)*, 3. *Ūrustambha* and similar other diseases are considered suitable for *Rūkṣaṇa Karma* (Ca. Sū. 22-30).

SIGNS OF ADEQUATE AND EXCESSIVE RŪKṢAṆA :

The signs of adequate and excessive *Rūkṣaṇa* are similar to those already described in case of *Laṅghana* (Ca. Sū.22-36).

4.-5. SNEHANA AND SVEDANA (OLEATION AND SUDATION)[27, 28, 29, 30]

Caraka has described in detail the features of *Snehana* and *Svedana karmas* in two independent chapters viz. Ca. Sū.13, 14

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23. रौक्ष्यं खरत्वं वैशद्यं यत् कुर्यात्तद्धि रूक्षणम्। (CS. Su. 22/10)
24. रूक्षं लघु खरं तीक्ष्णमुष्णं स्थिरमपिच्छलम्।
प्रायशः कठिनं चैव यद् द्रव्यं तद्धि रूक्षणम्॥ (CS. Su. 22/14)
25. कटुतिक्तकषायाणां सेवनं स्त्रीष्वसंयमः।
खलिपिण्याकतक्राणां मध्वादीनां च रूक्षणम्॥ (CS. Su. 22/29)
26. अभिष्यण्णा महादोषा मर्मस्था व्याधयश्च ये।
ऊरुस्तम्भप्रभृतयो रूक्षणीया निदर्शिताः॥ (CS. Su. 22/30)
27. स्नेहनं स्नेहविष्यन्दमार्दवक्लेदकारकम्॥ (CS. Su. 22/11)
28. स्तम्भगौरवशीतघ्नं स्वेदनं स्वेदकारकम्। (CS. Su. 22/12)
29. द्रवं सूक्ष्मं सरं स्निग्धं पिच्छिलं गुरु शीतलम्।
प्रायो मन्दं मृदु च यद् द्रव्यं तत् स्नेहनं मतम्॥ (CS. Su. 22/15)
30. उष्णं तीक्ष्णं सरं स्निग्धं रूक्षं सूक्ष्मं द्रवं स्थिरम्।
द्रव्यं गुरु च यत् प्रायस्तद्धि स्वेदनमुच्यते॥ (CS. Su. 22/16)

respectively. The readers are advised to refer to the same. As *Snehana* and *Svedana* form important *Pūrva Karmas* for popular *Pañca Karma* therapy, the necessary details of these two components of classical *Ṣaḍūpakramas* will be presented in the next chapter as *Pūrva Karma* of *Pañca Karma* Therapy.

6. STAMBHANA (RETAINING)

These are the measures which control the movement[31] of the *Gatimāna* and *Cala* liquid substances i.e. the biological fluids including, urine, faeces, sweat, blood etc. (Ca. Sū. 22 : 11). The *Śīta, Manda, Mṛdu, Slakṣṇa, Rūkṣa, Sūkṣma, Drava, Sthira* and *Laghu substances* are ordinarily *Stambhana* in their effect[32] (Ca. Sū. 22 : 15). Similarly all liquids, thin,[33] *Śītakāraka, Madhura, Tikta, Kaṣāya* drugs are considered *Stambhaka.* (Ca. Sū.22-32)

INDICATIONS OF STAMBHANA[34] :

1. Those who are burnt with *Pitta*, alkali, fire; 2. those who are suffering from diarrhoea and vomiting; 3. those suffering from poisoning and 4. those suffering from perspiration and similar problems. (Ca. Sū. 22 : 33).

SIGNS OF ADEQUATE STAMBHANA :

1. Increasing *Bala* or strength, 2. Relief from diseases for which *Stambhana* is indicated. These are the principal indicators of *Samyaka Stambhana* (Ca. Sū.22 : 37).

SIGNS OF EXCESSIVE STAMBHANA[35] :

(Ca. Sū. 22/40)

1. Cyanosis (Syāvatā), 2. Stiffness of the body parts

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31. स्तम्भनं स्तम्भयति यद्गतिमन्तं चलं ध्रुवम् ॥ (CS. Su. 22/11)

32. शीतं मन्दं मृदु श्लक्ष्णं रूक्षं सूक्ष्मं द्रवं स्थिरम्।
यद् द्रव्यं लघु चोद्दिष्टं प्रायस्तत् स्तम्भनं स्मृतम् ॥ (CS. Su. 22/17)

33. द्रवं तन्वसरं यावच्छीतीकरणमौषधम्।
स्वादु तिक्तं कषायं च स्तम्भनं सर्वमेव तत् ॥ (CS. Su. 22/32)

34. पित्तक्षाराग्निदग्धा ये वम्यतीसारपीडिताः ।
विषस्वेदातियोगार्ताः स्तम्भनीया निदर्शिताः ॥ (CS. Su. 22/33)

35. श्यावता स्तब्धगात्रत्वमुद्वेगो हनुसंग्रहः ।
हृद्वर्चोनिग्रहश्च स्यादतिस्तम्भितलक्षणम् ॥ (CS. Su. 22/40)

(Stabdhatā), 3. Anxiety *(Udvega)*, 4. Stiffness of the jaw *(Hanugraha)*, 5. Cardiac arrest *(Hṛdgraha)*, 6. Constipation *(Malabandha)*.

SIGNS OF INADEQUATE APPLICATION OF ṢAḌŪPAKRAMAS[36] :

1. No relief from the diseases treatable from the respective *Upakramas*, 2. Further aggravation of the diseases for which the respective *Upakrama* has been applied (Cu. Sū. 22 : 41).

ṢAḌŪPAKRAMA VS DVIVIDHOPAKRAM :

As emphasised by Vāgbhaṭṭa the above mentioned *Ṣaḍupakramas* may be essentially theorised into two broad categories of therapeutic interventions viz., (i) *Santarpaṇa*, (ii) *Apatarpaṇa-'Upakramasya hi Dvitvād Dvidhaivopakramo mataḥ'* (Ast. Hṛd. Sū.24). Caraka has also dealt with this aspect in Sūtrasthāna Chapter 23 *'Santarpaṇīya Adhyāya'* in view of the theoretical significance of the *Dvidhaivopakrama* approach to therapeutic intervention in general.

इति षट् सर्वरोगाणां प्रोक्ताः सम्यगुपक्रमाः ।
साध्यानां साधने सिद्धा मात्राकालानुरोधिनः ॥

(CS. Su. 22/42)

दोषाणां बहुसंसर्गात् संकीर्यन्ते हि उपक्रमाः ।
षट्त्वं तु नातिवर्तन्ते त्रित्वं वातादयो यथा ॥

(CS. Su. 22/43)

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36. लक्षणं चाकृतानां स्यात् षण्णामेषां समासतः ।
तदौषधानां धातूनामशमो वृद्धिरेव च ॥ (CS. Su. 22/41)

THE CLASSICAL ĀYURVEDĪYA PAÑCAKARMA THERAPY

Āyurveda is the science of life, its main objective being to relieve human suffering and to impart healthful longevity. Thus Āyurveda envisages the means of prevention and treatment of various ailments and preservation of health. This is achieved through appropriate regimes of *Āhāra, Vihāra* and *Auṣadhas.* Systemic *Saṁśodhana* of the body has been conceived to be the prime pre-requisite for all kinds of preventive and curative procedures. These purificatory procedures consist of variety of physico-physiological measures. *Panca Karma* therapy represents a similar integrated procedure. It may be pointed out that besides being of preparatory significance, *Saṁśodhana Karmas* form a full therapy in themselves for a variety of ailments. *Panca Karma* therapy is designed to eradicate the vitiated *Doṣas* and to maintain a state of normalcy and equilibrium which is the fundamental basis of health.

The term *Pañca Karma* is only a representative of this class of procedures, though many procedures are described and many others may be planned for achieving the above object. However, the *Pañcakarma* therapy is not a classification but is a comprehensive *saṁśodhana* regimen, under which all other similar procedures may be included. However, the classical *Pañca Karma* therapy consists of the following five *Karmas* viz., *Vamana, Virecana, Anuvāsana, Āsthāpana* and *Śirovirecana.*

In general the *Pūrva* and the *Paścāta Karmas* are also included in this procedure. The *Pūrva Karma* mainly consists of *Snehana* and *Svedana* while *Paścāta Karma* consists of *Saṃsarjana Krama*, the specialised post-therapy dietetic regimen.

The actual *Pañca Karma* therapy consists of the following categories of procedures :

(i) *Pūrva Karma*, (ii) *Pradhāna Karma*, (iii) *Paścāta Karma. Pūrva Karma* is the preparatory procedure required to be undertaken before actual *Pañca Karma* therapy is administered.

The *Pūrva Karma* mainly consists of the following procedures viz., *Pācana*, *Snehana* and *Swedana*. The *Pradhāna karma* during *Pañca Karma* therapy consists of the fivefold purificatory procedures mainly designed to eliminate the vitiated *Doṣas*. They are as mentioned earlier; *Vamana, Virecana, Anuvāsana, Āsthāpana* and *Śiro-virecana*. The *Paścāta Karma* or the *Saṁsarjana Krama* consists of a specialised diet schedule designed to restore the digestive and absorptive capacity of the person leading to the normal state of health. *Paścāta Karma (Saṁsarajana krama)* may include *Rasāyanādi* and *Śamanādi karmas* also.

SCHEME OF ŚODHANA AND ŚAMANA THERAPIES

- Pūrva Karma (Preparatory Procedures)
  - Deepana & Pācana (Appetizers & Digestants)
  - Snehana
    - # External Massage
    - # Internal Oleation
  - Svedana (Medicated Fomentation)
- Pradhān Karma (Main Procedures)
  - Vamana Karma Bio-Purificatory Therapeutic Emesis
  - Virecana (Bio-Purificatory Therapeutic Purgation)
  - Asthāpan Basti (Biopurificatory Therapeutic Enema) (Decoction Based)
  - Anuvāsan Basti (Therapeutic Enema) (Oil Based)
  - Nasya Karma Therapeutic Errhines
- Paścāt Karma (Post-Therapy regimen)
  - Samsarjan Krama (Post-Therapy Dietetic regimen)
  - ↓
  - Rasayana Therapy (Rejuvenation Immuno-Promotive Therapy)
  - ↓ Śaman Cikitsā (Palliative Drug Therapy)

SIMPLIFIED TIME SHEDULE OF TOTAL PANCAKARMA

	Deepana Pācana	Sneha Pāna	Abhyaṅga and Swedana	Vamana	Saṅsarjan krama	Rest	Snehapān	Abhyaṅga & Svedana	Virecana	Saṅsarjan krama	Rest	Vasti	Rest	Nasya
For Good Purification	3-10 days	7 days Day 1 to Day 7	7th evening 8th morning 8th evening 9th morning	On day '9' 9th Morning	7 days	1 day	5 days	3 days	24th day	7 days 24+7 =31	9 days 31+9 =40	16 days 40+16 =56	32 days	7 days
For Moderate Purification	3-10 days	5 days Day 1 to Day 5	5th E 6th M 6th E 7th M	on day 7	5 days 7+5 =12	1 day day 13	3 days 13+3 =16	3 days Day 19 (16+3)	20th day	5 days 20+5 =25	9 days 25+9 =33	8 days 33+8 =41	16 days	7 days
For Mild Purification	3-10 days	3 days day 1 to day 3	3rd E 4th M 4th E 5th M	on day 5	3 days 5+3 =8	1 day day 9	3 days 9+3 =12 days	3 days 12+3 =15 days	16th day	3 days 16+3 =19 days	9 days 19+9 =28 days	8 days 28+8 =36 days	10 days	7 days

Total Hospital Stay during the Pañca Karma 2 days
Total Hospital visits during the Pañca Karma 10-20 days (From 1/2 to 1 Hour/per day)

The term *Pañca Karma* has been more oftenly used by Caraka while Suśruta and Vagbhaṭa have put no emphasis on the use of this term. The respective commentators Cakrapāṇi, Ḍalhaṇa and Aruṇa Dutta have also used this term.

Caraka says that *Saṁśodhana, Saṁśamana* and avoidance or removal of *Nidāna* are the measures of choice to be adopted having regard to the principles enunciated for their application by a physician in respect of every and all diseases. The *Saṃśodhana karma*, as mentioned earlier, is a pre-requisite for *Rasāyana* and *Vājīkaraṇa* therapies also.

Thus *Pañca karma* therapy has a direct relevance to both, the healthy as well as the ill persons.

The knowledge about *Pañca Karma* therapy starts right from the classical period of Āyurveda. Caraka has discussed *Pañca karma* therapy in brief in Sūtra-sthāna, Vimāna-sthāna and Cikitsā-Sthāna. The greater details of the techniques are available in Siddhi-sthāna. The Kalpa-Sthāna exhibits descriptions about *Pañca-karma Dravyās*.

Caraka describes the basic tenets of *Saṇśodhan Cikitsā* in *Sūtra Sthāna* itself through 12 Chapters of *Bheṣaja, Kalpanā* and *Yojanā Catuṣka* clarifying the principles, approaches and major therapies like *Laṅghana, Bṛṃhaṇa, Snehana, Swedana, Vamana, Virecana* and *Raktamokṣaṇa*. He again returns back to *Pañca Karma* in *Siddhi Sthāna* which is fully devoted to the technical aspects of *Pañca Karma* Therapy specially *Basti*. But consideration of following chapters of Śūtra Sthāna of Caraka is crucial :

Bheṣaja Catuṣka :

Chapter 1 Dīrghañjīvitīya, Chapter 2 Apāmārga taṇḍulīya
Chapter 3 Āragwadhīya, Chapter 4 Ṣaḍvirecana Śataśritīya

Kalpanā Catuṣka :

Chapter 13 Snehādhyāya, Chapter 14 Swedādhyāya
Chaper 15 Upakalpaniya, Chapter 16 Cikitsā Prābhṛtiya

Yojanā Catuṣka :

Chapter 21 Asṭau Niṅditīya, Chapter 22 Laṅghan Bṛṁhaṇīya
Chapter 23 Santarpaṇīya, Chapter 24 Vidhi Soṇitīya

In *Upkalpanīya Adhyāya*, the 15th chapter of Sūtra-sthāna of Caraka Saṁhitā the equipments necessary for *Pañca-karma*

therapy along with the procedure of *Vamana, Virecana* and *Saṃsarjana krama* have been described. The *Cikitsā Prābhṛtiya* chapter is a master piece on approach and principles for success.

In 12 chapters of Kalpa-sthāna the various pharmaceutical preparations used for *Vamana* and *Virecaṇa* therapy specially the preparations of *Madanaphala* and *Trivṛta* have been described. In Siddhisthāna, *Pañcakarma* therapy has been described as a whole along with its indications, contra-indications and complications etc.

Pañca karma therapy has been described by Suśruta in two chapters in Cikitsāsthāna while, Caraka has described separately in Siddhisthāna. It seems that Suśruta regarded it as a part of Cikitsā while Caraka considered it an independent discipline.

Similar to Caraka, Suśruta has also given separate chapter for *Snehana* and *Svedana.* He has dealt with *Vamana* and *Virecana* including the complications in details. Besides, he has described *Anuvāsana*, *Nirūha* and *Uttara Vasti* in detail. In the end in 40th chapter he has described *Śirovirecana* also. Suśruta has described an additional procedure, the *Rakta Mokṣaṇa* which seems to be an especial procedure of blood-letting in cases of *Raktagata Vāta.*

In Bhela Saṁhitā the description of *Pañca karma* therapy resembles the description of Caraka Saṁhitā. In Aṣṭāṅga Saṅgraha, *Pañca karma* therapy has been described in 9 separate chapters in Sūtra Sthāna. *Snehana* and *Svedana* are described separately, while *Vamana* and *Virecana* are described together in the 27th chapter. Vasti has been described separately in 28th chapter. *Śirovirecana* has been described separately in 5 chapters, that is 29 to 33 Kalpa Sthāna describes a number of pharmaceutical preparations which may be used for *Pañcakarma* therapy.

In Aṣṭāṅga Hṛdaya the description of *Pañca karma* therapy seems to be similar to Aṣṭāṅga Saṁgraha except for 9 chapters on *Pañca karma* given in Sūtra Sthāna.

In Śārangadhara Saṁhitā, the *Pañca karma* therapy has been described in the III Part of the book. The quantitative dosage of *Snehana* therapy has been described in this text. The classification of *Svedana* therapy resembles that of Suśruta's classification. Besides other descriptions, *Uttar Vasti* has been described in details.

Similarly in recent years a number of investigators have reported voluminous literature on *Pañca karma* therapy among which the work done by Dwarakanath (1956), Kasture (1970), Chaturvedi (1971), Singh (1964-72), Jha and Singh (1970), Shardamma (1971), Deoraj (1972) and Kasture (1972) is worth referring. However, it may be pointed out that in none of these studies efforts have been made to standardize *Pañca karma* therapy or its constituent procedures except the work of Singh and Singh (1978) on standardization of *Vamana* and *Virecana karmas*.

Thus *Pañca karma* therapy with its *Pūrva* and *Paścāta Karmas* has been a subject of discussion in almost all the texts on Indian Medicine starting from the Āyurvedic classics up to the texts of *Saṁgraha Kāla* and Modern ages. The scope described for this method of treatment is very comprehensive viz., preventive, curative, rejuvenative and preparatory for surgery, and similarly there are very comprehensive claims about its efficacy. As would be discussed later due to a variety of reasons this therapy has ceased to be in common practice. In view of the fundamental role of these measures in the Āyurvedic approach to the care of health and disease, a need is felt to revive this system of treatment. For this, appropriate standardization regarding technical aspects, and the results including the immediate and delayed effects both beneficial as well as deleterious is considered essential. Singh and Singh (1978) have developped suitable clinical and laboratory standards for the administration and evaluation of the effects of *Pañca karma* therapy in general and *Vamana* and *Virecana Karmas* in particular.

WHAT IS PAÑCA KARMA THERAPY

The term *'Pañca karma'* consists of two words *'Pañca'* and *'Karma'*. *'Pañca'* means five and 'Karma' means method of treatment i.e. five-fold therapy viz., *Vamana, Virecana,* two types of *Vastis* and *Śirovirecana* (Nasya). *Vasti* is further subdivided into two : *Anuvāsana* and *Nirūha*. *Nirūha Vasti* is also known as *Āsthāpana Vasti*. All these procedures may be included under the general classical principles of treatment popularly described as *Ṣaḍupakrama* by Caraka (Cs. Sū. 22-3). *Anuvāsana Vasti* is essentially a *Sneha* (oleus) *Vasti*. Suśruta (SS. Sū. 5-1; Ḍalhaṇa

on SS, Sū.5-1) includes *Rakta-Mokṣaṇa* also under *Pañca karma* which indicates the special significance of *Rakta Mokṣaṇa* in surgical practice.

Pañca karma therapy is preceded by *Pūrva Karma* that is *Snehana* and *Svedana*. *Snehana* means oleation therapy using *Snigdha* medications, which render the body *Śnigdha* or oleus as well as it makes the vitiated *Doṣas* easily extractable. The word, *Sneha* is made up by the prefix *'Ghanya'*. As a matter of fact *Sneha* is a property of *Jala Mahābhoota*, Therefore the body becomes oily and smooth due to *Snehana* which is supposed to remove the roughness and dryness of the body, the principal features of *Śareera Vāyu*. In this context Snehana could be a specific therapeutic measure for *Vātic* disorders and allied conditions.

Svedana consists of fomentation inducing *Sveda* or sweating. *Sveda* is an internal *Mala* in the body. Induction of sweating prior to *Pañca Karma* therapy is known as *Svedana* therapy. *Swedana* should be performed after adequate *Snehana* and should essentially precede *Pradhāna* purificatory measures such as *Vamana* and *Virecana* etc. In view of its physical properties i.e. heat *(Uṣṇa) Svedana* would serve as a specific therapy for *Vātic* and *Kaphaja* disorders.

Vamana means to induce vomiting and it is used for the purification of the *Ūrdhwa Bhāga*. In this procedure the vitiated *Doṣas* are eliminated from the body per oral route. Besides its generic use *Vamana* is the specific therapy for *Kaphaja* disorders. *Vamana* is induced in properly prepared individuals by administration of appropriate *Vāmaka Dravyas* or emetic drugs, the most important drug of this category being *Madanaphala.*

Virecana means the process by which the vitiated *Doṣas* are removed from the body per *Adhobhāga* i.e. through *Guda* or the anus. It is a specific treatment for *Paittik* disorders. *Virecana* is administered in properly prepared subjects with the help of suitable *Recana Dravyas* like *Āragvadha* etc.

Vasti is another purificatory measure which consists of the introduction of suitable medicaments in the form of enemata through rectal, vaginal or urethral routes. The object is 'to eliminate vitiated *Doṣas* with the return of enema material and to

produce effects of the enematically introduced medicaments, which may be essentially an oleus *(Anuvāsana)* or non-oleus *(Āsthāpana* or *Nirūha)* substance. The procedure is designated as *Vasti* as it is operated with the help of an animal bladder used as enema can. However, *Vasti karma* is supposed to be the principal and specific therapy for *Vātik* disorders.

Śirovirecana or *Nasya* means the procedure by which required medications are introduced through nasal passage either in liquid or in powder forms. *Śirovirecana* or snuffing besides its sequential role in *Pañca karma* therapy has its specific role in *Śirorogaṣ.*

SCOPE AND IMPORTANCE OF PAÑCA KARMA :

Pañca Karma carries the unique idea of total disease cure. No other Medical system has any such therapy even at hypothetical Level.

The scope of *Pañca karma* may be divided under following heads :

(a) Curative (c) Rejuvenation
(b) Preventive (d) Preparatory for surgery
(e) Physiotherapy/Rehabilitation

Pañch karma therapy being an expensive procedure and also due to similar other reasons has become less common in clinical practice. Āyurveda believes that measures administered per oral route eliminate *Āmāśayagata Vyādhis* while those administered per rectum may influence the *Pakwāśaya gata Rogas.* Similarly the drugs induced by nasal route relieve *Ūrdhwa Jatrugata Rogas* as described in the following table (Ah. Sū. 20-1).

S. No.	Diseased organ of the body	Specific Pañca karma treatment indicated
a.	*Āmāśayagata Roga*	*Vamana, Virecana*
b.	*Pakwāśayagata Roga*	*Virecana, Vasti*
c.	*Ūrdhwajatrugata Roga*	*Nasya (Śirovirecana)*
d.	*Vagina,* uterus, urinary bladder diseases	*Uttara Vasti*

These *Karmas* have specific influence on different *Doṣas* in the body and accordingly they have specific indications (Ah. Sū. 1-25) as shown in the following table :

Doṣa	Specific therapy
Kapha	*Vamana*
Pitta	*Virecana*
Vāta	*Vasti*

Pañch karma therapy has also a relevance to *Agada Tantra* (Toxicology) of Āyurveda. In snake poisoning following *Karmas* are mentioned : *Raktamokṣaṇa* (blood-letting), *Nasya* and *Vamana Karma*. In *Asthāwara Viṣa* the following Karmas are indicated.

1. First stage	*Vamana*
2. Second stage	*Vamana, Virecana*
3. Third stage	*Nasya*
4. Fourth stage	*Sneha* by oral route
5. Seventh stage	*Raktamokṣaṇa*

Similar instances about the application of *Pañca karma* in all the eight branches of Āyurveda *(Aṣṭāṅga)* are available.

It is believed that diseases treated by drug therapy and *Saṁśamana* treatment may recur or relapse but the diseases treated with *Saṁśodhana karma*[37] never relapse and are eradicated for ever (Cs. Sū. 16-20)

THE SNEHANA KARMA

Snehana is the main *Pūrva karma* procedure. Literally *Snehana* means to oleate or to make smooth[38]. *Snehana* is the

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37. दोषाः कदाचित् कुप्यन्ति जिता लंघनपाचनैः ।
जिताः संशोधनैर्ये तु न तेषां पुनरुद्भवः ॥ (CS. Su. 16/20)

38. स्नेहोऽपां गुण विशेषः
स्नेहमार्दवकृत स्निग्धो बलवर्णकरस्तथा ॥ (SS. Su. 46/0)

principal property of *Jala Mahābhūta*. However, in this context it refers to the procedure adopted for inducing oleusness, with the help of *Sneha Dravyas*. Caraka very vividly describes *Snehana* in the following context-*"Snehanam Sneha Viṣyanda Mārdava Kleda Kārakam"* (Cs. Sū.22-11).

Prior to *Vamanādi Saṃśodhana* procedures one has to mobilize the vitiated *Doṣas* from their sites. This is achieved by *Snehana, Viṣyandana* and *Kledana* through *Snehana* therapy. This *Snehana* besides being the chief *Pūrva Karma* procedure for *Pañca karma* therapy, happens to be a specific treatment for *Vātik* disorders and therefore it is one of the most significant therapeutic procedures and may attain the significance of *Pradhāna karma (Ṣaḍupakramas)* (Cs. Sū. 22-3) in a particular case. Caraka has extensively dealt with this subject separately in l3th chapter of Sūtrasthāna. However, the salient features of *Snehana* therapy are described hereunder :

PROPERTIES OF SNEHANA AUṢADHIS (DRUGS) :

i. *Snigdha* ii. *Guru* iii. *Śeeta*
iv. *Mṛdu* v. *Drava* vi. *Picchila*
vii. *Sara* viii. *Manda* ix. *Sūkṣma.*

BASIC SOURCES OF SNEHA DRAVYAS[39, 40, 41] :

i. *Ghṛta (Ghee)* ii. *Taila-Til* (oils)
iii. *Vasā* (Fats) iv. *Majjā* (marrow)

INDICATIONS OF SNEHANA KARMA[42] :

i. Alcoholism ii. Dryness of the body
iii. Sexual exhaustion iv. Anxiety

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39. स्नेहानां द्विविधा चासौ योनिः स्थावरजंगमाः ॥ (CS. Su. 13/9)
40. तत्र द्वियोनिः चतुर्विकल्पोऽभिहतः स्नेहः स्नेहगुणाश्च।
तत्र जंगमेभ्यो गव्यं घृतं प्रधानं, स्थावरेभ्यो तिल तैलं प्रधानमिति ॥ (SS. Ci. 31/3)
41. सर्पिस्तैलं वसा मज्जा सर्व स्नेहोत्तमाः मता।
तत्रापि चोत्तम सर्पिः संस्कारस्यानुवर्तनात् ॥ (A. H. SS. 16/11)
42. स्वेद्याः शोधयितव्याश्च रूक्षा वातविकारिणः।
व्यायाममद्यस्त्रीनित्याः स्नेह्याः स्युर्ये च चिन्तकाः ॥ (CS. Su. 13/52)

v. Daily exercises
vi. *Rakta Kṣaya* and *Vīrya Kṣaya*
vii. *Timir Roga*
viii. Senility
ix. *Abhiṣyandi*
x. Preparation for *Vamana* and *Virecana* etc.

CONTRA-INDICATIONS OF SNEHANA KARMA[43] :

i. *Kaphaja* and obese persons.
ii. Excessive salivation and anal secretions.
iii. *Mandāgni* (Poor digestive fire)
iv. Pregnancy
v. Thirst vi. Indigestion.
vii. Poisoning
viii. Anorexia
ix. Persons having undergone *Virecana*
x. Tikṣṇāgni,
xi. Rainy day.
xii. Udara Roga
xiii. Excessive weakness
xiv. Vomiting
xv. Coma etc.

PROCEDURES OF SNEHANA KARMA :

Snehana is a *Pūrva Karma* precedure for *Pañca Karma* therapy. It involves the following steps :

I. *Examination of the patient* in order to work out the-(i) *Ātura Bala Pramāṇa* and (ii) *Vyādhi Bala Pramāṇa* in a particular case before he is made to undergo the *Snehana* therapy. This may involve the *Daśa Vidha Parīkṣā* (*Prakṛti, Vikṛti, Sāra,*

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43. संशोधनादृते येषां रूक्षाणं संप्रवक्ष्यते।
न तेषां स्नेहनं शस्तमुत्सन्नकफमेदसाम्॥
अभिष्यण्णाननगुदा नित्यमन्दाग्नयश्च ये।
तृष्णमूर्च्छापरीताश्च गर्भिण्यस्तालुशोषिणः॥
अन्नद्विषश्छर्दयन्तो जठरामगरार्दिताः।
दुर्बलाश्च प्रतान्ताश्च स्नेहग्लाना मदातुराः॥
न स्नेह्या वर्तमानेषु न नस्तोबस्तिकर्मसु।
स्नेहपानात् प्रजायन्ते तेषां रोगाः सुदारुणाः॥ (CS. Su. 13/43-46)

Saṃhanana, Pramāṇa, Sātmya, Satwa, Āhāra Śakti, Vyāyāma Śakti and *Vaya*) described by Caraka (Cs. V. 8-96). *Ṣaḍ Vidha Parīkṣā* (*Praśna*-Interrogation + *Pañcendriya*-Five fold physical examination) described by Suśruta (SS. Sū. 10-4) and *Aṣṭasthāna Parīkṣā* (*Nāḍi, Mūtra, Mala, Jihwā Śabda, Sparśa, Dṛk* and *Ākṛti*) described by Yoga Ratnākara (*Nāḍi-Parīkṣā*. 1).

II. Determination of *Kālāwadhi (duration)*[44, 45, 46] : The standard advocated by different Ayurvedic texts in this reference (Cs. Si. 1-6; Ss. Ci. 31-36; Ah. Sū. 16-29) are as follows :

S. No.	Duration of Snehana	Patients with the type of Koṣṭha (constitution)
1.	3 days	*Mṛdu Koṣṭha* (Cs. Sū. 13-66, 67)
2.	4-6 days	*Madhya Koṣṭha* (Cs. Sū. 13-66, 67)
3.	7 days	*Krūra Koṣṭha* (Cs. Sū. 13-66,67).

However, the average duration of *Snehana* should be between 3 to 7 days because *Snehana* given for more than 7 days becomes *Sātmya* and it does not produce *Śodhana* effect (Cs. Si. 1-6; SS. Ci. 31-36;-Ah. Sū.16-29). On the other hand Vāgbhaṭṭa emphasizes that *Snehapāna* should be continued till one develops the manifestations of *Snigdhāwasthā* irrespective of any time limit (Ah. Sū.16-29). Therefore, *Snehana* may be given for even less than 3 days or more than 7 days depending upon the need.

III. *Determination of Dosage* is the next important step. The following dosage schedule is advocated in the classical literature based on the time required for digestion of the *Sneha* taken (related to *Agni Bala*[47] of the patient). The types of doses namely

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44. त्र्यहमच्छं मृदौकोष्ठे क्रूरे सप्तदिनं पिबेत्
सम्यग् स्निग्धोऽथवा यावत् अत: सात्म्यीभवेत्परम्॥ (A. H. Su. 16/29)

45. पिबेत्त्र्यहं चतुरहं पञ्चाहं षडहं तथा।
सप्तरात्रात् परं स्नेह: सात्म्यीभवति सेवित:॥ (SS. Ci. 31/36)

46. त्र्यहावरं सप्तदिनं परं तु स्निग्धो नर: स्वेदयितव्य उक्त:॥
नात: परं स्नेहनमादिशन्ति सात्म्यीभवेत् सप्तदिनात् परं तु। (CS. Si. 1/6)

47. मात्रा जरां प्रति। इति तिस्र: समुद्दिष्टामात्रा स्नेहस्य मानत:। (CS. Su. 13/29)

Hraswa, Madhya and *Uttama Mātrās* have been described (Ah. Sū.16-17). However, it has been emphasized that *Snehana* should be started with a test dose *(Hrasīyasi Mātrā)* which should be even less than the *Hraswa Mātrā* (SS. Ci. 31-30; Ah. Sū.16-17). Some authors have suggested 2 Pala, 4 Pala and 6 Pala as the *Hrasīyasi Mātrā*[48] (A. D. on Ah. Sū.16-17). However, this looks to be a high dose. In clinical practice 3-5 *Tolas* are taken as test dose of *Snehana*.

S.No.	Dosage	Definition	Indications
1.	*Hrasīyasi*	Test dose	For testing the *Koṣṭha*
2.	*Hraswa*	Digestible within 6 hours.	*Mṛdu Koṣṭhī*
3.	*Madhya*	Digestible within 12 hours.	*Madhya Koṣṭhī*
4.	*Uttama*	i. Digestible within 18 hours ii. Digestible within 24 hours.	*Krūra Koṣṭhī*

iv. *Dietetic Management Prior to Snehana* : Both Caraka (Cs. Sū.13-60) and Vāgbhaṭṭa (Ah. Sū.16-25) have suggested certain dietary restrictions as a pre-requisite for *Snehapāna*. According to them, (i) *Drava* (liquid), *Uṣṇa* (warm) and *Pramāṇa yukta* (regulated quantity) diet is indicated and (ii) *Abhiṣyandi* (sticky to the channels), *Saṇkīrṇa* (incompatible) and *Atisnigdha* (too oleus) diets are contraindicated.

V. *Procedure of Actual Sneha Pāna* : The *Mṛdu Koṣṭha* persons should be given *Snehapāna* early in the morning within 15-30 minutes after sun-rise (SS. Ci. 31-14). This should be accompanied by auspicious recitations. The type of *Snehana* should be determined according to the patient. *Snehapāna* should be started by 2.5 *Tolas* and should be increased as per observations as per following schedule.

48. द्वाभ्यां चतुर्भिरष्टाभिर्यामैर्जीर्यन्ति याः क्रमात् ॥
ह्रस्वमध्योत्तमा मात्रास्तास्ताभ्यश्च ह्रसीयसीम् ।
कल्पयेद्वीक्ष्य दोषादीन् प्रागेव तु ह्रसीयसीम् ॥ (AH. Su. 16/17)

The *Śodhana Mātrā* (high dose) of *Snehana* always produces intolerance. Still to achieve desired effects the physician should encourage the patient to take the dose. To avoid the taste, sight and smell the patient may be asked to take the *Snehapāna* with closed eyes and nose.

DOSAGE SCHEDULE

Test dose	1 ounce	2.5 *Tolas*
Ist day	2 ounces	5.0 *Tolas*
IInd day	3 ounces	7.5 *Tolas*
IIIrd day	4 ounces	10.0 *Tolas*
IVth day	6 ounces	15.0 *Tolas*
Vth day	8 ounces	20.0 *Tolas*
VIth day	10 ounces	25.0 *Tolas*
VIIth day	12 ounces	30.0 *Tolas*.

PRACTICAL SCHEDULE OF DOSAGE OF SNEHA

Day	Krura Koṣṭha	Madhyama Koṣṭha	Mṛdu Koṣṭha
1	50-75	25-50	10-30
2	75-100	50-75	30-60
3	100-150	100-150	60-120
4	150-200	125-175	-
5	200-250	200-250	-
6	275-300	-	-
7	350-400	-	-
Total	1200-1500 ml	500-700	100-210 ml.

TYPE OF SNEHAN TO BE PREFERRED

(1) For Healthy (2) For diseased in the absence of disease specific *sneha*.

Can Prefer, Plain *Ghee* (South Asia)
Olive oil (Western countries)

Some of Disease specific *Snehana*

Disease	Type of Oil/Ghee
Śwāsa (Bronchial Asthma)	*Vāsa Ghṛta*
Kuṣṭha (Psoriasis, Eczema)	*Tikta/Pañcatikta*
Unmāda (Psychosis)	*Brāhmi Ghṛta*
Apasmāra (Epileptic disorder)	*Kalyaṇa Ghṛta*
	Pañca gavya Ghṛta
Pakṣāghāta	*Tila Taila*
Prameha (NIDDM)	*Pippalyādi Ghṛta*
Grahaṇī (IBS)	*Pañca Moolādi Ghṛta*

Certain patients complain of diarrhoea after *Snehapāna*. They should be considered *Mṛdu Koṣṭha* persons. Such persons should not be given *Śodhana* dose of *Sneha*. They should be treated by *Śamana Sneha* and *Bṛṃhaṇa Sneha*. However, *Snehapāna* is generally followed by *Hṛllāsa, Chardi, Aruci, Udgāra* etc. Whenever such symptoms arise the patient should be administered Sneha with lemon juice as suggested by Kasture (1970) which may be a routine procedure 3rd to 4th day onwards when the dose of *Snehapāna* is increased. Caraka (Cs. Sū.13-22) advises the following *Anupānas*.

ANŪPANA IN SNEHAPĀNA :

(1) *Uṣṇodaka*-It is an universal *Anupāna* specially used in *Ghṛta Sneha*. But in *Bhallātaka Tailapāna Śītajala* is used.

(2) *Yūṣa* is used in *Taila Pāna*.

(3) *Maṇḍa* is used in *Vasā* and *Majjāpāna*.

Similarly Suśruta (SS. Ci. 31-19) describes the following *Doṣa*-wise schedule of Anupānas. Vāgbhaṭṭa (As. Sū.25) also gives a similar indication.

S. No.	Doṣa	Anupāna	Sneha used
1.	*Vāta*	*Lavaṇa*	*Ghṛta*
2.	*Pitta*#	Nil	*Ghṛta*
3.	*Kapha*	*Kṣāra, Trikaṭu*	*Ghṛta*

Ghṛta Snehapāna is contra-indicated in *Paittic* states (CS. Sū. 13/31).

OBSERVATIONS OF THE PATIENT

During and after *Snehapāna* a close watch is essential on the manifestations of the digestion of *snehana*, its after effects and complications if any. The following are some such points described in Ayurvedic texts.

FEATURES OF JĪRYAMĀNA (under digestion) SNEHA[49]

(As. Sū.25 : SS. Ci. 31-33)

1. *Śiroruja* (Headache)
2. *Bhrama* (Confusion)
3. *Lālāsrāva* (Salivation)
4. *Mūrchā* (Fainting)
5. *Sāda* (Tiredness)
6. *Klama* (Neurasthenia)
7. *Tṛṣā* (Thirst)
8. *Dāha* (Burning)
9. *Arati* (Tiredness)

FEATURES OF SNEHA JIRṆA

(As. Sū.25)

1. Disappearance of *Śirorujā* (no headache)
2. *Lāghawa* (Lightness in the body)
3. *Vātānulomana* (Passing of flatus)
4. *Kṣudhā Pravṛttī* (Appetite)
5. *Triṣāpravṛtti* (Thirst)
6. *Udgāra Śuddhi* (Eructations).

FEATURES OF SAMYAKA (ADEQUATE) SNEHANA[50, 51, 52]

(Cs. Sū.31/53)

1. *Agnideepti* (accelerated digestive fire)

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49. तेनोद्गारो भवेच्छुद्धो भक्तं प्रति रुचिस्तथा।
स्युः पच्यमाने तृड्दाहभ्रमसादारतिक्लमाः ॥ (SS. Ci. 31/33)

2. *Snehodveṣa* (intolerance to fat)
3. *Asanhata Varca* (loose motions)
4. *Aṅga Lāghawa* (lightness in the body)
5. *Gātra Mārdawa* (tenderness in the body)
6. *Snigdha Gātratā* (smoothness in the body)
7. *Snigdha Purīṣa* (oleus stools)
8. *Snigdha Twaca* (oleus skin)
9. *Vātānulomana* (passage of flatus)
10. *Adhastāda Sneha Darśana* (Visible fats in stool).
11. *Klama* (neurasthenia)
12. *Śaithilya* (lethargy)

FEATURES OF ASNIGDHA[53, 54] (INADEQUATE) SNEHANA

(CS. Sū.13-57; SS. Ci. 31-51-52)

1. *Grathita Purīṣa* (scybalous stool)
2. *Rūkṣa Purīṣa* (dry stool)
3. *Agnimāndya* (weak digesting power)
4. *Vāta Pratilomana* (irregulated Vāta)
5. *Gātra Kharatā* (roughness of body)

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50. वातानुलोम्यं दीप्तोऽग्निर्वर्चः स्निग्धमसंहतम्।
मार्दवं स्निग्धता चाङ्गे स्निग्धानामुपजायते॥ (CS. Su. 13/58)

51. सुस्निग्धा त्वग्विट्शैथिल्यं दीप्तोऽग्निर्मृदुगात्रता।
ग्लानिर्लाघवमङ्गानामधस्तात् स्नेहदर्शनम्।
सम्यक्स्निग्धस्य लिङ्गानि स्नेहोद्वेगस्तथैव च॥ (SS. Ci. 31/53)

52. वातानुलोम्यं दीप्तोऽग्निर्वर्चः स्निग्धमसंहतम्॥
स्नेहोद्वेगः क्लमः सम्यक्स्निग्धे, रूक्षे विपर्ययः। (Ah. Su. 16/30)

53. पुरीषं ग्रथितं रूक्षं वायुरप्रगुणो मृदुः।
पक्ता खरत्वं रौक्ष्यं च गात्रस्यास्निग्धलक्षणम्॥ (CS. Su. 13/57)

54. पुरीषं ग्रथितं रूक्षं कृच्छ्रादन्नं विपच्यते।
उरो विदहते वायुः कोष्ठादुपरि धावति।
दुर्वर्णो दुर्बलश्चैव रूक्षो भवति मानवः॥ (SS. C1. 31/51-52)

6. *Gātra Rukṣatā* (dryness of body)
7. *Urovidāha* (burning sensation in chest)
8. *Dourbalya* (weakness)
9. *Kṛcchra Annapācana* (late digestion)
10. *Susnigdha Viparyaya* (features opposite to those of *Samyaka Sneha*).

FEATURES OF ATISNIGDHA[55, 56, 57] (EXCESSIVELY) SNIGDHA

1. Yellowness in body
2. Heaviness and stiffness of the body
3. Undigested food passing through stool
4. Dullness *(Tandrā)*
5. Anorexia *(Aruci)*
6. Nausea and vomiting etc.

FEATURES OF SAMYAKA (ADEQUATE) SNEHA

(Cs. Sū.13-52; SS. Ci. 31-53; Ah. Sū.16-30)

ASAMYAKA (INADEQUATE) SNEHA

(Cs. Sū.13-57, 59; SS. Ci. 31-51, 52) :

SNEHA VYĀPADA (COMPLICATIONS) :

Acute Complications (Cs. Sū.16-75, 76).

1. *Ajirṇa* (Indigestion)
2. *Tṛṣṇā* (Thirst)
3. *Sajñānāśa* (unconsciousness)
4. *Tandrā* (dullness)
5. *Utkleśa* (nausea)

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55. भक्तद्वेषो मुखस्त्रावो गुददाहः प्रवाहिका।
पुरीषातिप्रवृत्तिश्च भृशस्निग्धस्य लक्षणम्॥ (SS. Ci. 31/54)

56. पाण्डुता गौरवं जाडयं पुरीपस्याविपक्कता।
तन्द्रीररुचिरुत्कलेशः स्यादतिस्निग्धलक्षणम्॥ (CS. Su. 13-59)

57. अतिस्निग्धे तु पाण्डुत्वं घ्राणवक्त्रगुदस्त्रवाः॥ (Ah. Su. 16/31)

6. *Ānāha* (tympanitis)
7. *Jwara* (fever)
8. *Stambha* (stiffness)
9. *Aruci* (anorexia)
10. *Śūla* (pain in abdomen)
11. *Āma Pradoṣa* (late effects of indigestion).

Chronic Complications[58-59] (Cs. Sū.13-75, 76)

1. *Kuṣṭha* (skin diseases)
2. *Kaṇḍu* (itching)
3. *Pāṇḍu* (anaemia)
4. *Śotha* (oedema)
5. *Udara Roga* (G. I. T. diseases)
6. *Grahaṇī* (Sprue Syndrome)
7. *Arśa* (Piles)
8. *Staimitya* (Numbness)
9. *Vāknigraha* (difficulty in speech)

POST-SNEHANA REGIMEN[60, 61] :

The following are beneficial for a patient who has undergone Snehana (Cs. Sū.13-62, 63; Ah. Sū.13-26, 27; Sū. U. 1-35).

58-59. कुष्ठानि कण्डूः पाण्डुत्वं शोफार्शास्यरुचिस्तृषा।
जठरं ग्रहणीदोषः स्तैमित्यं वाक्यनिग्रहः।
शूलमामप्रदोषाश्च जायन्ते स्नेह विभ्रमात्॥ (CS. Su. 13/75)

60. उष्णोदकोपचारी स्याद् ब्रह्मचारी क्षपाशयः।
शकृन्मूत्रानिलोद्गारानुदीर्णांश्च न धारयेत्॥
व्यायाममुच्चैर्वचनं क्रोधशोकौ हिमातपौ।
वर्जयेदप्रवातं च सेवेत शयनासनम्॥ (CS. Su. 13/62, 63)

61. उष्णोदकोपचारी स्याद् ब्रह्मचारी क्षपाशयः।
न वेगरोधी व्यायामक्रोधशोकहिमातपान्॥
प्रवातयानयानाध्वमाप्यात्यासनसंस्थितोः।
नीचात्युच्चोपधानाहःस्वप्नधूमरजांसि च॥
यान्यहानि पिबेत्तानि तावन्त्यन्यान्यपि त्यजेत्। (Ah. Su. 13/26, 27)

1. *Uṣṇodakopacāra* (use of warm water)
2. *Brahmacarya* (abstenance from sexual activities)
3. *Kṣapāsaya* (only night sleeping)
4. *Begāwarodha varjana* (to avoid abstenance from natural calls)
5. *Ucca Vacana Varjana* (to avoid loud speaking)
6. *Śoka-krodha Varjana* (to avoid anger and anxiety)
7. *Himātapana Varjana* (to avoid exposure to heat and cold)
8. *Pravāta Varjana* (to avoid walking in open air)
9. *Vyāyāma Varjana* (avoid exercise and hard work)
10. *Śayanāsana* (bed rest)
11. *Yānādhwa Varjana* (to avoid journey)
12. *Samsthitaḥ* (Suitable posture)
13. *Dhūma-Rajānsi Varjana* (to avoid fume and dust)
14. *Divā Swapna Vivarjana* (to avoid day sleep)
15. *Rātri Jāgaraṇa Varjana* (to avoid night arousal)
16. *Abhiṣyandi-Rūkṣānna Vivarjana* (to avoid coarse and constipating diet)

EXTERNAL OLEATION/BĀHYA SNEHAN :

Snehan and *Svedan* form *Pūrvakarma* for *Saṇsodhan* Therapies. *'Snehan'* here incorporates both Internal oleation as well as External Massage.

Massage as Pūrva Karma :

Massage/*Abhyaṅga* in general is used for producing relaxation as well as for giving tone to the muscles.

However, Massage as a *Pūrva Karma* is performed to promote circulation and to aid in fomentation of *Svedan* Therapy. Massaging the body gently, after applying medicated oil is known as *Abhyaṅga*. In a thoroughly oleated person distribution of heat will be uniform and time taken for Fomentation/*Svedan* is also lessened.

Special considerations in Massage/*Abhyaṅga* : Following

four areas/systems should be given due consideration before determining the direction and Pressure applications during *Abhyaṅga*.

1. The origin & insertion of Muscles.
2. Lymphatic drainage.
3. State of circulation
4. Vital Parts/Joints/Muscles/heart etc.

Conditions associated with venous stasis such as CHF & lymphoedema, the direction of Massage should be aimed to promote circulation.

Type of oil used for Massage.

Type of oil selection usually depends on the wisdom of the physician, but in general the selection of oil depends on the type of Doṣic predominance.

For Body Massage.

In *Vāta* diseases - *Nārāyaṇa Taila, Mahā Nārāyaṇa Taila* etc.

In *Pitta* diseases - *Kṣeerabala Taila, Candanadi Taila* etc.

In *Kapha* diseases - *Sahacarādi* Taila can be used.

For Head Massage - *Candanādi* Taila
- *Brāhmī Taila* can be used.

Time and duration as *Pūrva Karma* Procedure.

Before *Vaman* - 4 times at an interval of 12 Hours (From the Evening of completion of Internal oleation)

Before *Virecan* - '8' times at the interval of 12 Hours.

Before *Basti* - Every Therapeutic enema has to be preceeded by Massage.

Every Massage schedule should be followed by *Svedana karma* or Medicated Fomentation.

The seven postures for Massaging the body are.

1. Sitting 2. Lying . Left Lateral 4. Back 5. Right Lateral 6. Lying 7. Sitting.

The various types of massage and their applicability with clinical indications

Type of Massage	Direction of Massage	Pressure exerted	Types	Substance used for Massage	Clinical Indications
Abhyaṅga	Away from Heart Downward	Normal Pressure	-	Medicated oil/sesame oil	1. For Bio-Purification 2. For Massage in Children 5-12 yr. young female, aged, HTN, IHD, RA Insomnia
Unmardana	Towards Heart upward	Normal Pressure	-	Oil	1. Healthy individual 2. Body ache, fatigue
Mardana	Away from Heart Downward	High pressure	-	Oil	Healthy Individual Adult male
Saṁvahana	Gentle application of oil	No pressure	-	Oil	Babies & child (1-5 years) Acute osteo arthiritis, pregnant woman
Udvartana	Towards Heart upward direction	pressure	Udvartana Udgarṣana Utsādana	Powder Dry, Powder Pastes	
Lepa	Application of Medicated paste	-	Pralepa Pradeha Ālepa	Cold, Thin paste Wet, Hot Between cold & Hot.	

SWEDANA KARMA

Swedana[62] is the next important *Pūrva Karma* procedure.

62. स्नेहपूर्व प्रयुक्तेन स्वेदेनावजितेऽनिले।
पुरीषमूत्ररेतांसि न सज्जन्ति कथंचन॥ (CS. Su. 14/4)

In principle *Swedana* is designed to induce sweating. Caraka very clearly states that *Swedana* is the procedure which relieves stiffness, heaviness, cold and which induces sweating-*"Stambha Gourāwa Śeetaghnam Swedanam Sweda Kārakam"* (Cs. Sū.22-11).

As a matter of fact *Sweda* is one of the Malas described by Āyurveda. It is the specific *Mala* of *Meda Dhātu-"Malaḥa Swedastu Medasaḥa"* (Cs. Ci. 15-18). These *Malas* inspite of being waste product, have some useful function in the body. *Sweda* arises out of the effect of *Uṣmā* or heat. In fact *Sweda* or Sweating is a physiological function in the body. However, the application of artificial means to induce or aggravate sweating is the *Swedana Karma* which is included in the *Pūrva Karma* of Pañca karma therapy. It is administered generally after *Snehana* and precedes *Vamana* in the sequence of *Pañca Karma* therapy. It is a major preparatory procedure for *Pañca Karma* therapy necessary for the management of various disorders except for *Kuṣṭha Roga* where it is contraindicated especially in *Pittolwaṇa* varieties and also other states where *Pitta* is prominent.

Besides being the principal *Pūrva Karma* procedure, *Swedana* is the specific treatment for a number of disorders specially the *Vāta Pradhāna* diseases, where *Swedana* may be a *Pradhāna Karma*. Caraka includes *Swedana* under *Ṣaṭ Upakramas* (Ca. Sū.22-3) and thus respects *Swedanā* as a principal method of treatment. However, in the context of *Pañca karma* therapy, *Swedana* is a *Pūrva karma* and is administered to liquify the *Snigdha* (by earlier *Snehana*) vitiated *Doṣas* spread in the system in order to make it convenient to expel them out with the help of *Pradhāna Karmas* such as *Vamana, Virecana, Vasti* and *Śirovirecana* etc.

CLASSIFICATION OF SWEDANA KARMA :

Swedana karma in principle consists of induction of sweating by application of heat. There may be a number of ways and means to practise this procedure and accordingly several classifications are suggested. However, the classical classification of *Swedana* suggested by Caraka (Cs. Sū.14-39, 40, 63, 64) appears appropriate and is quoted below :

I. SĀGNI SWEDA[63]	II. ANĀGNI SWEDA[64]
1. *Saṅkara*	1. *Vyāyāma*
2. *Prastara*	2. *Uṣṇa Sadana*
3. *Nāḍī*	3. *Guruprāvaraṇa*
4. *Pariṣeka*	4. *Kṣudhā*
5. *Awagāhana*	5. *Bahupāna*
6. *Jentāka*	6. *Bhaya*
7. *Aśmaghna*	7. *Krodha*
8. *Karśu*	8. *Upanāha*
9. *Kuṭee*	9. *Yudhaḥ*
10. *Bhū*	10. *Ātapa*
11. *Kumbhi*	
12. *Kūpa*	
13. *Holāka*	

Suśruta[65] (SS. Ci. 32-3) and Vāgbhaṭa (Ah. Sū.17-1) suggest a more simple classification of *Swedana* in terms of (I) *Tāpa Sweda,* (2) *Ūṣma Sweda,* (3) *Upanāha Sweda* and (4) *Drava Sweda.*

The indications, contraindications and other important features of *Swedana karma* are described hereunder :

INDICATIONS OF SWEDANA[66] :

1. *Pratiśyāya* (corrhyza)

63. सङ्करः प्रस्तरो नाडी परिषेकोऽवगाहनम्।
जेन्ताकोऽश्मघनः कर्षूः कुटी भूः कुम्भिकैव च॥
कूपो होलाक इत्येते स्वेदयन्ति त्रयोदश।
तान् यथावत् प्रवक्ष्यामि सर्वानेवानुपूर्वशः॥ (CS. Su. 14/39-40)

64. व्यायामं उष्णसदनं गुरुप्रावरणं क्षुधा।
बहुपानं भयक्रोधावुपनाहाहवातपाः॥
स्वेदयन्ति दशैतानि नरमग्निगुणादृते। (CS. Su. 14/64)

65. चतुर्विधः स्वेदः, तद्यथा–तापस्वेदः, ऊष्मस्वेदः, उपनाहस्वेदो,
द्रवस्वेद इति; अत्र सर्वस्वेदविकल्पावरोधः॥ (SS. Ci. 32/3)

66. प्रतिश्याये च कासे च हिक्काश्वासेष्वलाघवे।

2. *Kāsa* (cough)
3. *Karṇa Śūla* (earache)
4. *Śiraḥ Śūla* (headache)
5. Monoplegia, Hemiplegia, Paraplegia
6. *Vivandha* (constipation)
7. *Mūtrāghāta* (anuria and retention)
8. *Pārśwagraha* (rigid flanks) and *Hanugraha* (stiff Jaw)
9. *Khalli Roga* (tetany)
10. *Āmavāta* (arthritis) etc.

CONTRA-INDICATIONS OF SWEDANA :

1. *Mada* (alcoholism)
2. *Garbha* (pregnancy)
3. *Raktapitta* (haemorrhage)
4. *Atisāra* (diarrhoea)
5. *Pittaja Prameha* (chemical diabetes)
6. *Kāmalā* (jaundice)
7. *Udara Roga*
8. *Uraḥkṣata* (chest injury)
9. *Vātarakta* (gouts, leprosy).

PROCEDURE OF SWEDANA KARMA :

Swedana is a major *Pūrva karma* procedure. It should be

कर्णमन्याशिर:शूले स्वरभेदे गलग्रहे ॥
अर्दितैकाङ्गसर्वाङ्गपक्षाघाते विनामके ।
कोष्ठानाहविबन्धेषु मूत्राघाते विजृम्भके ॥
पार्श्वपृष्ठकटीकुक्षिसंग्रहे गृध्रसीषु च ।
मूत्रकृच्छ्रे महत्त्वे च मुष्कयोरङ्गमर्दके ॥
पादोरुजानुजङ्घार्तिसंग्रहे श्वयथावपि ।
खल्लीष्वामेषु शीते च वेपथौ वातकण्टके ॥
संकोचायामशूलेषु स्तम्भगौरवसुप्तिषु ।
सर्वाङ्गेषु विकारेषु स्वेदनं हितमुच्यते ॥ (CS. Su. 14/20-24)

administered after the *Snehana* and should precede *Vamana karma*. The following factors should essentially be considered in reference to *Swedana karma* (Cs. Sū.14).

1. *Vyādhi Nature of Disease*[67] (Cs. Sū.14-6) : *Swedana* is a part of *Saṁśodhana karma* and is indicated accordingly. However, it is contraindicated in certain states as mentioned earlier.

2. *Ṛtu*[68] (season) (Ca. Sū, 14-8)

(a) In *Śīta Ṛtu-Mahān Sweda*

(b) In *Ūṣṇa Ṛtu-Mṛdū Sweda*

3. *Rogī*[68] (Patient) (Cs. Sū.14-8) to be considered as below :

S. No.	Type of Swedana	Types of the patient
i.	*Mahān Sweda*	i. *Uttama Śārīrika Bala*
	(Tikṣṇa Sweda)	ii. *Uttama Manobala*
ii.	*Madhyama Sweda*	i. *Madhyama Śārīra Bala*
		ii. *Madhyama Manobala*
iii.	*Mṛdu Sweda*	i. *Durbala Śārīra Bala*
		ii. *Awara Manobala.*

4. Deśa[69] (part of the patient's body) (Cs. Sū. 14-10 Different types of *Swedas* are advocated for application to different parts of the body for instance :

(i) *Rukṣa Sweda* for *Āmāśayagata*[70] *Vāta* and (ii) *Sneha*

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67. रोगर्तुव्याधितापेक्षो नात्युष्णोऽतिमृदुर्न च।
द्रव्यवान् कल्पितो देशे स्वेद: कार्यकरो मत: ॥ (CS. Su. 14/6)

68. व्याधौ शीते शरीरे च महान् स्वेदो महाबले।
दुर्बले दुर्बल: स्वेदो मध्यमे मध्यमो हित: ॥
वातश्लेष्मणि वाते वा कफे वा स्वेद इष्यते।
स्निग्धरूक्षस्तथा स्निग्धो रूक्षश्चाप्युपकल्पित: ॥ (CS. Su. 14/8)

69. वृषणौ हृदयं दृष्टी स्वेदयेन्मृदु नैव वा।
मध्यमं वङ्क्षणौ शेषमङ्गावयवमिष्टत: ॥ (CS. Su. 14/10)

70. आमाशयगते वाते कफे पक्वाशयाश्रिते।
रूक्षपूर्वो हित: स्वेद: स्नेहपूर्वस्तथैव च ॥ (CS. Su. 14/9)

Sweda for *Pakwāśayagata Kapha* (Cs. Sū.14-8). Moreover *Swedana* is contraindicated for scrotum, heart and eyes. However, if *Swedana* is very much essential *Mṛdu Swedana* should be used (Cs. Sū.14-9).

5. *Vaya* (Age) (Cs. Sū.14-10) : As dietary habits and physico-physiological status of individuals vary with age, one should adopt *Mṛdu, Madhyama* and *Tīkṣṇa Sweda* in consideration with age.

6. *Types of Swedana* : If *Swedana* has to be done as a pre-requisite for *Saṁśodhana*, it should follow *Snehana* (on 4th or 8th day-Cs. Si. 1-6) or if *Swedana* is to be done as a *Saṁśamana* measure it should be done as per need. The technical types of *Swedana* are already described. However, in general the Pharmacodynamic properties of *Swedana Auṣadhis* are described as under :

(i) *Uṣṇa*, (ii) *Tīkṣṇa*, (iii) *Sara*, (iv) *Snigdha*, (v) *Rūkṣa*, (vi) *Sūkṣma*, (vii) *Drava*, (viii) *Sthira*, (ix) *Guru* (Cs. Sū.22-14).

7. *Features of Asamyaka (Inadequate) Sweda*;

(i) Less sweating, (ii) No relief from pain, (iii) No relief from cold.

8. *Features of Samyaka*[71] *(Adequate) Sweda* (Cs. Sū.14/13) :

i. *Śitoparama* (disappearance of cold)

ii. *Śūloparama* (relief from pain)

iii. *Stambha Nigraha* (relief from stiffness)

iv. *Gourawa Nigraha* (relief from heaviness)

v. *Mārdawa* (Smoothness in the body)

vi. *Sweda Srāva* (Adequate sweating)

vii. *Vyādhihānirlaghuttwam* (Remission of the disease)

viii. *Śītarthitwam* (desire for cold).

9. *Features of Ati*[72] *(excess) Sweda* (Cs. Sū.14/14) :

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71. शीतशूलव्युपरमे स्तम्भगौरवनिग्रहे ।
संजाते मार्दवे स्वेदे स्वेदनाद्विरतिर्मता ॥ (CS. Su. 14/13)

72. पित्तप्रकोपो मूर्च्छा च शरीरसदनं तृषा ।

i. *Pitta Prakopa* (Aggravation of *Pitta*)

ii. Burning sensation in the body

iii. Fainting

iv. Heaviness of body

v. Lethargy

vi. Pain starting in the joints

vii. *Viṣphoṭa*

viii. *Bhrama* (Confusion)

ix. *Klama* (Tiredness)

x. Vomiting

xi. Symptoms of *Rakta Prakopa*

xii. *Tṛṣṇā* (thirst) etc.

During *Swedana* therapy the managing physician must keep a close watch on l. duration of *Swedana*, 2. manifestations of *Samyaka* (adequate), *Asamyaka* (inadequate), *Ati* (excess) *sweda* and *sweda Vyāpada* (complications). These features have been described elsewhere. However, if symptoms of *Atiswinna* (excessive *swedana*) arise, the following measures should be adopted. (Cs. Sū.14/15)

1. *Madhura, Śeeta, Drava* and *Snigdha* food
2. *Śeeta Mantha* added with sugar
3. *Śrita Śeeta Jala*
4. *Madya* in addicted persons
5. Avoid *Lavaṇa, Amla, Kaṭu, Uṣṇa*
6. Live in cold room in day time and in moonlight during night.
7. *Candana Pralepa*
8. Fanning with *Candanodaka*
9. To live in cool places.

दाहः स्वेदाङ्गदौर्बल्यमतिस्विन्नस्य लक्षणम् ॥ (CS. Su. 14/14)

उक्तस्तस्याशितीये यो ग्रैष्मिकः सर्वशो विधिः ।
सोऽतिस्विन्नस्य कर्तव्यो मधुरः स्निग्धशीतलः ॥ (CS. Su. 14/14-15)

10. *General Post Swedana Regimen* : In general a patient having undergone *Swedana* should be advised (i) to live in open air, (ii) to avoid cold water, (iii) warm water sponging, (iv) rest, (v) warm water bath, (vi) to sleep after taking *Drava, Laghu* and *Abhiṣyandi* diet, (vii) to take suitable measures for psychoneurological effects and complications if any. Further, if this Swedana has been done as a prerequisite for *Saṃśodhana* the patient should be considered for the same, on the next day. Generally *Vamana* should be given on 2nd day of *Swedana* and *Virecana* after about 3 days interval. If *Basti, Nasya* or *Rakta Mokṣaṇa* is to be given, they may be given immediately after *Swedana*.

11. *Mode of Action of Sweda* (Kasture, 1970) :

a. *Stambhaghna*

b. *Gourawaghna*

c. *Śitaghna*

d. *Swedakāraka*

e. Other functions :

i. *Doṣas* become liquid (Cs. S. I-7)

ii. *Vāta Niyāmana* (Cs. Sū. 14-4)

iii. *Gātra Vinamana* (Cs. Sū. 14-5)

iv. *Agnidīpana* (SS. Ci. 32-21, 22)

v. *Twaka Mārdawa* (SS. Ci. 32)

vi. *Bhakta Śraddha* (SS. Ci. 32)

vii. *Srotośuddhi* (SS. Ci. 32)

viii. *Nidrā-Tandrā Nāsa* (SS. Ci. 32)

ix. *Sandhi Ceṣṭā* (SS. Ci. 32)

x. *Doṣa śodhana* (SS. Ci. 32).

The various techniques of *Swedana* as described in Ayurvedic texts have been referred to earlier. The same or suitably modified procedures may be adopted to administer *Swedana Karma* in appropriate cases. An accordingly developed procedure now-a-days more commonly used in clinical practice is known as *Piṇḍa Sweda*. It is popularly practised by South Indian *Vaidyas* in the name of *Navare Kizi*. It appears as a modification

of *Saṅkara Sweda* of Caraka (CS. Sū. 14). The details about the technique and other aspects of this procedure may be seen in recent publications by Moose (1944), Singh et al. (1973); Chaturvedi (1973) and Deoraj (1972) and also in this monograph under *Keraliya Pañca Karma.*

THE VAMANA KARMA

Vamana is the major *Pradhāna karma* procedure of *Pañca Karma* therapy. Literally *Vamana* means to expel out the vitiated *Doṣas* through the oral route. The expelled material may consist of indigested food, *Kapha* and *Pitta. Vamana* is the principal property of *Pṛthvī* and *Jala Mahābhūtas.*

An extensive discussion is available on *Vamana* and *Vāmaka* drugs in Ayurvedic classics. The Caraka's Ṣaḍvirecaniya Adhyāya in Sūtrasthāna (Cs. Sū. 4) exhibits both *Virecaka* as well as the *Vāmaka* drugs. This indicates that both these actions may be common for certain drugs. There is also evidence to suggest both these terms, the *Vamana* and the *Virecana* in a similar meaning. In fact *Vamana* and *Virecana* both are *Saṁśodhana* procedures and both may be called *Virecana* as they expel *Doṣas* from the body. However, *Vamana* is the *Ūrdhwa Bhāgahara Saṁśodhana* while *Virecana* is the *Adhobhāgahara Saṁśodhana* and thus both are allied processes.

Thus *Saṃśodhana* means to eradicate the *Doṣas* either through *Adhobhāga* or *Urdhwabhāga. Vamana* can also be named *Ūrdhwa Virecana.* In certain contexts of Vedic literature following terms are used for *Vamana* e.g. *Vamana, Vami, Chardana, Chardi.* According to Śāraṅgdhara and Bhāva Prakāśa *Vamana* is the process which expells *Apakwa Pitta* and *Kapha* forcibly through the *Urdhwa Bhāga.* In this reference *Apakwa* generally means vitiated or *Dūṣita Pitta* and *Kapha.* The area of *Kapha* is the *Urdhwa Bhāga* of the body. And *Āmāśaya* is its specific seat. Thus the above statements regarding the effect of *Vamana* are consistent.

On the above principle *Vamana* is indicated for elimination of *Doṣas* not only in disease states but also in healthy persons in different states where *Kapha* is aggravated within normal limits

such as in *Vasanta Ṛtu* etc. for preservation of health and prevention of disease.

Vamana Karma is the specific therapy for *Kaphaja* disorders. *Vamana* should always be preceded by suitable *Pūrva Karmas* in order to mobilize the *Doṣas* from the discrete parts of the body *(Śākhā)*. It is believed that imbalanced *Doṣas* spread from the *Koṣṭha* to the *Śākhā* and thus be able to produce various types of diseases depending upon the *Doṣa-Duṣya-Adhiṣṭhāna* pattern.

To irradicate the imbalanced *Doṣas* it is essential to mobilize the vitiated *Doṣas* in the *Śākhā* and to bring them back from *Śākhā* to the *Koṣṭha* so that they may be easily expelled out by *Vamanādi Saṁśodhana Karmas*. It is believed that *Snehana* makes these *Doṣas* softer and *Swedana* helps in mobilization and liquification, of these *Doṣas* making them to flow back to the *Koṣṭha*. Therefore appropriate *Pūrva Karma* in the form of *Snehana* and *Swedana* is always essential.

To irradicate the vitiated *Doṣas* the following specific principles are adopted :

For *Vāta*	*Vasti karma*
For *Pitta*	*Virecana Karma*
For *Kapha*	*Vamana Karma*

PHARMACODYNAMIC PROPERTIES OF VĀMAKA DRAVYAS

(Cs. Kalp. 1-5)

1. *Uṣṇa*	4. *Vyawāyi*
2. *Tīkṣṇa*	5. *Vikāsī*
3. *Sūkṣma*	6. *Urdhwabhāga Prabhāva*

However, one finds a vivid description of *Vamana* drugs in Caraka Saṁhitā (Cs. Kalp. 1-6; Cs. Sū. 4) and other Ayurvedic texts. Such drugs have been classified in two categories : (i) *Vāmaka* drugs, i.e. those who induce vomiting; (ii) *Vamanopaga* drugs i. e. those who help or augment *Vamana* or further enhance the *Vamana* already induced by a *Vamana* drug. All authorities in Āyurveda emphasize *Madanaphala* as the best

Vamana drug, the pharmacodynamic properties of which are given hereunder.

1. *Rasa-Kaṭu, Tikta, Kaṣāya, Madhura*
2. *Guṇa-Laghu, Rūkṣa*
3. *Virya-Uṣṇa*
4. *Vipāka-Kaṭu*
5. *Karma-Vamana*
6. *Doṣa-Kapha-Pitta Śodhana.*

INDICATION OF VAMANA KARMA[73, 74, 75]

(Cs. Si. 2-10; SS. Ci. 33-18; AH. Sū. 18, 2, 3; AS. Sū. 27).

1. *Pīnasa* (Nasal discharge)
2. *Kuṣṭha* (Skin diseases)
3. *Nava Jwara* (Acute fever)
4. *Rajayakṣmā* (Tuberculosis)
5. *Kāsa* (Cough)
6. *Śwāsa* (Asthma)
7. *Galagraha* (Stiff neck)
8. *Slīpada* (Filariasis)
9. *Galagaṇḍa* (Goitre)
10. *Prameha* (Diabetes)
11. *Mandāgni* (Dyspepsia)
12. *Viruddhājirṇa* (Indigestion)
13. *Visūcikā* (Gastro-enteritis)

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73. वाम्यास्तु-विषशोषस्तन्यदोषमन्दाग्न्युन्मादापस्मारश्लीपदार्बुदविदारिकामेदोमेहगर-ज्वरारुच्यपच्यामातीसारहृद्रोगचित्तविभ्रमविसर्पविद्रध्यजीर्णमुखप्रसेकहृल्लासश्वासकास-पीनसपूतीनासकण्ठौष्ठवक्त्र पाककर्णास्रावाधिजिह्वोपजिह्विकागलशुण्डिकाध: शोणितपित्तिन: कफस्थानजेषु विकारेष्वन्ये च कफव्याधिपरीता इति ॥
(SS. Ci. 33/18)

74. शेषास्तु वम्या:, विशेषतस्तु पीनसकुष्ठनवज्वरराजयक्ष्मकासश्वासगलग्रहगल-गण्डश्लीपदमेहमन्दाग्निविरुद्धाजीर्णास्रविसूचिकालसकविषगरपीतदष्टदिग्धविद्धाध: शोणितपित्तप्रसेक(दुर्नाम) हृल्लासारोचकाविपाकापच्यपस्मारोन्मादातिसारशोफ-पाण्डुरोगमुखपाकदुष्टस्तन्यादय: श्लेष्मव्याधयो विशेषेण महारोगाध्यायोक्ताश्च; एतेषु हि वमनं प्रधानतममित्युक्तं केदारसेतुभेदे शाल्याद्यशोषदोषविनाशवत् ॥
(CS. Si. 2/10)

75. नवज्वरातिसाराध:पित्तासृग्राजयक्ष्मिण: ।
कुष्ठमेहापचीग्रन्थिश्लीपदोन्मादकासिन: ॥
श्वासहृल्लासवीसर्पस्तन्यदोषोर्ध्वरोगिण: । (AH. Su. 18/2, 3)

14. *Alasaka* (Int. Obst.)
15. *Viṣapīta* (Poisoning)
16. *Viṣadagdha* (Chemical Burn)
17. *Viddha* (injured)
18. *Adhoga Raktapitta* (Anal and urethrovaginal haemorrhages)
19. *Mukha Praseka* (Salivation)
20. *Arśa* (Piles)
21. *Hrillāsa* (Nausea)
22. *Aruci* (Anorexia)
23. *Avipāka* (Indigestion)
24. *Apacī* (Cervical Adenitis)
25. *Granthi* (Lymphadenitis)
26. *Apasmāra* (Epilepsy)
27. *Unmāda* (Insanity)
28. *Atisāra* (Diarrhoea)
29. *Śopha* (Oedema/inflam mation)
30. *Pāṇḍu* (Anaemia)
31. *Mukha Pāka* (Stomatitis)
32. *Stanya Duṣṭi* (Lactation disorders)
33. *Arbuda* (Tumors)
34. *Vidārikā* (Bubo)
35. *Medoroga* (obesity)
36. *Hṛdroga* (heart disease)
37. *Citta vibhrama* (confusion)
38. *Visarpa* (Erysepelos)
39. *Vidradhi* (abscess)
40. *Pūtinasa* (Foul nasal discharge)
41. *Kaṇṭhapāka* (Sore throat)
42. *Karṇasrāwa* (Ear discharge)
43. *Adhijihwikā* (Epiglotitis)
44. *Galaśuṇḍikā* (Uvulitis)
45. *Kapha Vyādhi* (Kaphaja disorders)

CONTRAINDICATION OF VAMANA KARMA[76, 77, 78] :

(CS. Si. 2-10; SS. Ci. 33-14, 15; AH. Sū. 18-3-6)

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76. अवाम्या गर्भिणी रूक्षः क्षुधितो नित्यदुःखितः ॥
बालवृद्धकृशस्थूलहृद्रोगिक्षतदुर्बलाः ।
प्रसक्तवमथुप्लीहतिमिरक्रिमिकोष्ठिनः ॥
ऊर्ध्वप्रवृत्तवाय्वस्रदत्तबस्तिहतस्वराः ।
मूत्राघात्युदरी गुल्मी दुर्बलोऽत्यग्निरर्शसः ॥
उदावर्तभ्रमाष्ठीलापार्श्वरुग्वातरोगिणः ।
ऋते विषगराजीर्णविरुद्धाभ्यवहारतः ॥ (A. H. Su. 18/3-6)

77. अवम्यास्तावत्-क्षतक्षीणातिस्थूलातिकृशबालवृद्धदुर्बलश्रान्तपिपासितक्षुधित-कर्मभाराध्वहतोपवासमैथुनाध्ययनव्यायामचिन्ताप्रसक्तक्षामगर्भिणीसुकुमारसंवृतकोष्ठ-दुश्छर्दनोर्ध्वरक्तपित्तप्रसक्तच्छर्दिरूर्ध्ववातास्थापितानुवासितहृद्रोगोदावर्तमूत्राघातप्लीह-

1. *Kṣata-Kṣīṇa* (Chest injury)
2. *Atisthūla* (Excessive obesity)
3. *Atikṛśa* (Cachexia)
4. *Bāla* (Child-hood)
5. *Vṛddha* (Old age)
6. *Durbala* (Weak)
7. *Śrānta* (Tired)
8. *Pipāsita* (Thirsty)
9. *Kṣudhita* (Hungry)
10. *Karmahata* (Exhausted)
11. *Bhārahata* (Tired)
12. *Adhwahata* (Tired)
13. *Upwāsita* (Fast)
14. *Maithuna Prasakta* (Excess coitus)
15. *Adhyayana Prasakta* (Excess study)
16. *Vyāyāma Prasakta* (Excess exercise)
17 *Cintā Prasakta* (Excessive anxiety)
18. *Kṣāma* (Neurasthenia)
19. *Garbhiṇī* (Pregnancy)
20. *Sukumāra* (Tender)
21. *Sambrita Koṣṭha* (Constipation)
22. *Kṛmi Koṣṭha* (Helminthiasis)
23. *Duṣchardana* (diffculty in emesis)
24. *Ūrdhwa Rakta Pitta* (Haemorrhage)
25. *Prasakta Chardi* (vomiting)
26. *Ūrdhwa Vāta* (Eructation)
27. *Āsthāpita* (Given enema)
28. *Anuwāsita* (Given oleus enema)
29. *Hṛdroga* (heart disease)
30. *Udāwarta* (Reverse Peristalsis)
31. *Mūtrāghāta* (Retention, Anuria)
32. *Plīhā Doṣa* (Splenomegaly)
33. *Gulma* (Abd. swellings)
34. *Udara* (G. I. T. diseases)
35. *Asṭhīlā* (Prostatitis)
36. *Swaropaghāta* (Aphonia)
37. *Timira* (Cataract)
38. *Śaṅkha-Śiraḥ Śūla* (Headache)
39. *Karṇa Śūla* (Earache)
40. *Akṣi Śūla* (pain in eyes)
41. *Nitya Dukhi* (unhappy)
42. *Arśa* (Piles)
43. *Bhrama* (confusion)

गुल्मोदराष्ठीलास्वरोपघाततिमिरशिरः शङ्खकर्णाक्षिशूलार्ताः ॥ (CS. Si. 2/10)

78. न वामयेत्तैमिरिकोर्ध्ववातगुल्मोदरप्लीहकृमिश्रमार्तान् ।
स्थूलक्षतक्षीणकृशातिवृद्धमूत्रातुरान् केवलवातरोगान् ॥
स्वरोपधाताध्ययनप्रसक्तदुश्छर्दिदुः कोष्ठतृडार्तबालान् ।
ऊर्ध्वास्रपित्तिक्षुधितातिरूक्षगर्भिण्युदावर्तिनिरूहितांश्च ॥ (SS. Ci. 33/14, 15)

44. *Pārśwarūk* (Chest pain)

45. *Vāta Vyādhi* (Neuro-muscular diseases)

PROCEDURE OF VAMANA KARMA :

Vamana is usually the first major procedure, *(Pradhāna Karma)* in *Pañca Karma* therapy. It has to follow the *Pūrva Karma (Snehana, Swedana)* and should generally precede *Virecana Karma*. However, some authorities advocate *Virecana karma*, without administering *Vamana* with the view that *Kapha Doṣa* may be eliminated through the *Adhobhāga* (anus). However, it does not appear proper because the *Kapha doṣa* driven down with such a *virecana* may enter the *Grahaṇī* and produce certain abnormalities. Therefore, it is always better to give a course of *Vamana* before *Virecana*[79] is administered (SS. Ci. 33-19). The essential pre-requisites for *Vamana* are as follows (Cs. Sū. 15-9).

1. *Pūrva karma* by adequate *Snehana* and *Swedana*.
2. *Prasanna Mana* (happy mood)
3. *Sukhoṣitam* (Good sleep in night)
4. *Suprajīrṇa Bhaktam* (proper digesion of previous night meal)
5. *Śiraḥ Snātam* (Full bath)
6. *Anuliptagātram* (having applied *Pralepa*)
7. And other auspicious considerations

Having so prepared the person is given a dose of *Madhu-Madhuka-Saindhava* (Cs. Sū. 15-8). However, one has to evolve a systematic procedure for *Vamana karma.* The following are the important requirements to be fulfilled before *Vamana* is conducted : 1. Collection of necessary facilities such as assisting staff, equipments, utensils etc. and suitable drugs for inducing *Vamana* and for managing complications, 2. *Ātura Parīkṣā* or examination of the patient regarding his suitability for *Vamana*;

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79. विरेचनमपि स्निग्धस्विन्नाय वान्ताय च देयम्, अवान्तस्य हि सम्यग्विरिक्तस्यापि सतोऽधः स्रस्तःश्लेष्मा ग्रहणीं छादयति, गौरवमापादयति, प्रवाहिकां वा जनयति ॥
(SS. Ci. 33/19)

3. determination of the *doṣage*[80] of *Vamana* drug following the broad principles described by the classics (Cs. Sū. 15-10; Cs. Si. 6-15, 16; SS. Sū. 39-10, 12, 14; AS.), 4. *Ātura Siddhatā* or preparation of the patient by suitable diets *(Kaphotklesaka Āhāra)*, *Snehana, Swedana* and appropriate suggestions and assurances to the patient; 5. *Pradhāna Karma* i.e. induction of *Vamana* by administration of suitable *Vāmaka dravyas* like *Madanaphala* etc.

A large many drugs are known as *Vāmakas* or emetics and *Vamanopaga* but *Madanaphala* as also mentioned earlier is considered the best among such drugs and so is commonly used in practice. The following *Yoga* (compound) may by used in a single dose in routine for inducing *Vamana.*

Madanaphala	4 parts
Vacā	2 parts
Saindhawa	1 part
	1/2-1 *Tola*
Anupāna	*Madhu* (honey)

Before administering the above *Vāmaka* dose suitable *Vamanopaga* steps should be taken in order to help the action of the *Vāmaka* agent. In common practice *Ikṣu Rasa*, *Madya* or *Māmsa Rasa* are given in sufficient quantities prior to *Vamana.* Kasture (1970) advocates *Ākaṇṭha Dugdhapāna* (3-4 Lbs) and *Ikṣu Rasa Pāna* (4-6 Lbs) prior to *Madana Phala-Vacā-Saindhava Yoga.*

The following drugs should be available for managing the complications :

(a) *Pācana, Deepana, Śūla-Haraṇa, Pitta Śāmaka. Hṛdya* and *Balya* drugs which may be used in appropriate forms whenever required.

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80. अल्पमात्रं महावेगं बहुदोषहरं सुखम्।
लघुपक्वं सुखास्वादं प्रीणनं व्याधिनाशनम्॥
अविकारि च व्यापत्तै नातिग्लानिकरं च यत्।
गन्धवर्णरसोपेतं विद्यान्मात्रावदौषधम्॥ (CS. Si. 6/15, 16)

(b) *Pācana Cūrṇa, Suta Śekhara Rasa, Pravāla Piṣṭhi* and certain other similar compound drugs should commonly form the armamentarium of *Pañca Karma* unit.

Ātura Parīkṣā :

The following aspects of *Doṣic* status are considered in the examination of the patient selected for *Vamaṅa karma.*

1. *Doṣa-Kṣaya* and *Vṛddhī*
2. *Samatwa* of *Doṣas*
3. *Ūrdhwa gamana* of *Doṣas*
4. *Adhogamana* of *Doṣas*
5. *Tīryaka gamana* of *Doṣas*
6. *Swatantra* and *Paratantra Doṣas*
7. *Sāma-Nirāma Doṣa*
8. *Vṛddha, Madhya* and *Alpa Doṣa*

DETERMINATION OF DOSE IN VAMANA YOGA

1. Suśruta (SS. Sū. 39-90, 14) suggests the *Vamana* dose as 16 *Tolas* depending upon (i) *Vyādhi Bala*, (ii) *Agni Bala*, and (iii) *Puruṣa Bala.*

2. Vāgbhaṭṭa (AS. San) suggests no fixed parameter for dose determination. Following factors need consideration.

1. *Vyādhi Bala* (Severity of disease)
2. *Koṣṭha* (Constitution)
3. *Vaya* (Age)
4. *Deśa* (Climate)
5. *Kāla* (Weather)

3. Caraka (Cs. Si. 6-15, 1C) describes the following as the effects of an ideal dose of *Vamana.*

1. Maximum elimination of *Doṣas* with minimum dose.
2. Occurance of spontaneous bout of *Vamana.*
3. *Vamana* leading to alleviation of the disease.
4. Absence of complications.
5. Taste, smell and colour should be pleasant.

4. Bhāva Prakāśa and Śāraṅgadhara (Śā. Ut. 3-16, 17) describe the following dosage schedule.

FOR KAṢĀYA :

1. *Uttam Mātrā*	9 *Prastha*
2. *Madhyama Mātrā*	6 *Prastha*
3. *Hinamātrā*	3 *Prastha*

FOR KALKA, AWALEHA AND CŪRṆA :

1. *Uttama Mātrā*	3 *Pala* (12 *Tola*)
2. *Madhyama Mātrā*	2 *Pala* (8 *Tola*)
3. *Hinamātrā*	1 *Pala* (4 *Tola*)

5. The average standard doses suggested by Kasture (1970) are as follows :

1. Kwātha	10-12 *Tolas*
2. *Cūrṇa, Kalka*	9-10 *Tolas*

DIETARY MANAGEMENT :

The dietary adjuncts are the essential part of the therapy during *Pūrva Karma, Pradhāna Karma* and the *Paścāta Karma.* In principles before *Vamana Snigdha* stuffs are given. However, the diet should not be excessively *Snigdha*, it should be *Laghu, Uṣṇa* and *Anabhiṣyandi.* As also mentioned earlier one should try to induce nausea or *Utkleśa* before *Vamana* with the help of suitable dietary elements or *Vamanopaga* agents. Caraka (Cs. Kalp. 1-14; Si. 1-8) advocates[81] *Grāmya Ānūpa Māṁsa Rasa* and *Abhiṣyandi Śāka.* Thus administration of 1. *Kaphotkleśaka Ahara*, 2. *Snehana* and *Swedana* are the essential preparatory procedures for *Vamana Karma.*

However, for routine purposes *Ākaṇṭha Dugdha* or *Ikṣu Rasa Pāna* followed by 1/2 to 1 Tola *Madanaphala Cūrṇa* with *Madhu* may be adequate to stimulate the vomiting centre or induce *Vamana.* Suśruta (SS. Ci. 33-7) says that[82] *Sukumāra,*

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81. ग्राम्यौदकानूपरसैः समांसैरुत्क्लेशनीयः पयसा च वम्यः ॥
रसैस्तथा, जाङ्गलजैः सयूषैः स्निग्धैः कफावृद्धिकरैर्विरेच्यः । (CS. Si. 1/8)

82. तत्र सुकुमारं कृशं बालं वृद्धं भीरुं वा वमनसाध्येषु विकारेषु क्षीरदधित-
क्रयवागूनामन्यतममाकण्ठं पाययेत् ॥ (SS. Ci. 33/7)

Bāla, Krśa, Bṛddha and *Bhiru* persons should consume milk, curd, *Takra* or *Yavāgu* prior to *Vamana.*

CLINICAL OBSERVATION OF THE PATIENT DURING VAMANA :

As described by Caraka[83] (Cs. Sū. 15-11), Suśruta[84] (SS. Ci. 33-7) and Vāgbhaṭṭa (AH. Sū. 18-10, 19) the patient after receiving the *Vamanopaga* dravyas if watched for a *Muhūrta* develops :

(i) *Sweda Prādurbhāva,* (ii) *Roma Harṣa,* (iii) *Kukṣi Ādhmāna,* (iv) *Hrillāsa* and *Lālāsrāwa* and (v) *Vamana.* If *Vamana* does not occur spontaneously one should trickle the finger in the throat to induce *Vamana.* If this also fails *Madana Phala Madhu Yoga* should be given. A flow sheet of routine procedure for *Vamana* as suggested by Kasture (1970) is presented below.

Ākaṇṭha Dugdha + *Ikṣu Rasa Pāna*

Decoction of *Vāmaka* Drugs + *Madhuyaṣṭi*

If no spontaneous *Vamana*

Madanphala Cūrṇa + *Madhu* Single dose

Definite *Vamana* occurs

If this also fails

Ryle's tube aspiration and mechanical stomach wash.

CRITERIA[85] OF EFFECTIVE VAMANA

(Cs. Si. 1-13,14)

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83. तस्य यदा जानीयात् स्वेदप्रादुर्भावेण दोषं प्रविलयनमापद्यमानं, लोमहर्षेण च स्थानेभ्यः प्रचलितं, कुक्षिसमाध्मापनेन च कुक्षिमनुगतं, हृल्लासास्यस्रवणाभ्यामपि चोर्ध्वमुखीभूतम्। (CS. Su. 15/11)

84. पीतौषधं च पाणिभिरग्नितप्तैः प्रताप्यमानं मुहूर्तमुपेक्षेत, तस्य च स्वेदप्रादुर्भावेण शिथिलतामापन्नं स्वेभ्यः स्थानेभ्यः प्रचलितं कुक्षिमनुसृतं जानीयात् ततः प्रवृत्तहृल्लासं ज्ञात्वा जानुमात्रासनोपविष्टमाप्तैर्ललाटे पृष्ठे पार्श्वयोः कण्ठे च पाणिभिः सुपरिगृहीत-मङ्गुलीगन्धर्वहस्तोत्पलनालानामन्यतमेन कण्ठमभिस्पृशन्त वामयेत्तावद्यावत् सम्यग्वान्तलिङ्गानीति ॥ (SS. Ci. 33/7)

85. जघन्यमध्यप्रवरे तु वेगाश्चत्वार इष्टा वमने षढष्टौ ॥

Vamana	Jaghanya (Hina Suddhi) Low	Madhyama Siddhi Medium	Prawara (Uttama) Siddhi Maximum
No. of Bouts	4	6	8
Total quantity	1 Prastha	1½ Prastha	2 Prastha
Other Features	Kapha Elimination	Kapha Elimination in the end	Kapha + Pitta

FEATURES OF SAMYAKA (ADEQUATE) VAMANA

1. *Doṣa Kāla Pravṛtti*
2. Elimination of *Doṣas* in order of *Kapha, Pitta, Vāta*
3. Self induction
4. *Hṛdaya Śuddhi*
5. *Pārśwa Śuddhi*
6. *Mūrdha Śuddhi*
7. *Srota Śuddhi*
8. *Indriya Śuddhi*
9. *Lāghawa*
10. *Kārśya*
11. Weakness
12. *Kaṇṭha Śuddhi*
13. *Kapha Saṇsrava*
14. *Anati Mahati Vyathā*

FEATURES OF ASAMYAKA (INADEQUATE) VAMANA

1. *Bega-Apravṛtti*
2. *Auṣadhi Pravṛtti alone*
3. *Bega-Vibandha*
4. *Hṛdaya Aśuddhi*
5. *Srotro-Aśuddhi*
6. *Guru Gātratā*
7. *Sphota*
8. *Koṭha*
9. *Kaṇḍu*
10. *Kapha Praseka*
11. *Jwara*

FEATURES OF EXCESSIVE VAMANA :

1. Fenila *Vamana* (Frothy vomiting)
2. *Sarakta Candrikā* (with blood)

दशैव ते द्वित्रिगुणा विरेके प्रस्थस्तथा द्वित्रिचतुर्गुणश्च।
पित्तान्तमिष्टं वमनं विरेकादर्धं कफान्तं च विरेकमाहुः॥
द्वित्रान् सविट्कानपनीय वेगान्मेयं विरेके वमने तु पीतम्॥ (CS. Si 1/13-14)

3. *Tṛṣā* (Thirst)
4. *Moha* (confusion)
5. *Mūrchā* (Fainting)
6. *Vātaprakopa* (aggravation of *Vāta*)
7. *Nidrānāśa* (Insomnia)
8. *Bala Hāni* (Weakness)
9. *Hṛtpīḍā* (Cardiac pain)
10. *Kaṇṭha Śūla* (Throat pain)
11. *Tamaḥpraveśa* (Clouding of vision)
12. *Bhrama* (confusion)
13. *Pittatiyoga* (Excess biliary discharge)
14. *Mṛtyu Śoṇita Nirgamāt* (Death due to haemorrhage)
15. *Dāha* (Burning)

VYĀPADAS OR COMPLICATIONS OF VAMANA[86] :

(A) *According to Caraka* (Cs. Si. 6-29)

1. *Ādhmāna* (Flatulance, constipation)
2. *Parikartikā* (Cutting pain)
3. *Srāwa* (discharge)
4. *Hṛdgraha* (Cardiac discomfort)
5. *Gātragraha* (Stiffness in the body)
6. *Jiwādāna* (Haematemesis)
7. *Bibhranśa* (Mental symptoms)
8. *Stambha* (Stiffness)
9. *Upadrawa* (Complications)
10. *Klama* (Neurasthenia).

(B) *According to Suśruta*[87] (SS. Ci. 34-3)

1. *Virecana* (diarrhoea) produced by *Vamana* drug

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86. आध्मानं परिकर्तिश्च स्रावो हृद्गात्रयोर्ग्रहः ।
जीवादानं सविभ्रंशः स्तम्भः सोपद्रवः क्लमः ॥ (CS. Si 6/29)

87. तत्र वमनस्याधोगतिरुर्ध्वं विरेचनत्येति पृथक्; सामान्यमुभयोः—सावशेषौषधत्वं, जीर्णौषधत्वं, हीनदोषापहृतत्वं, वातशूलम्, अयोगो, अतियोगो, जीवादानम्, आध्मानं, परिकर्तिका, परिस्रावः, प्रवाहिका, हृदयोपसरणं, विबन्ध, अङ्गप्रग्रह इति ॥
(SS. Ci. 34-3)

2. *Sāwaśeṣatwa* of *Auṣadhi* (Residual of drugs)
3. *Jīrṇa Auṣadhatwa* (Digestion of drugs)
4. *Hīna Doṣāpaharaṇa* (Deficiency of elimination of *Doṣa*)
5. *Vātaśūla* (Neuralgic pain).
6. *Ayoga* (ineffective *Vamana*)
7. *Atiyoga* (excessive emesis)
8. *Jiwādāna* (haematemesis)
9. *Ādhmāna* (tympanitis)
10. *Parikartikā* (cutting pain)
11. *Parisrāwa* (discharge)
12. *Prawāhikā* (diarrhoea)
13. *Hṛdayāpasaraṇa* (Displacement of heart)
14. *Vibandha* (Constipation)
15. *Vamana* (Emesis) caused by *Virecana* drug

CERTAIN UPAKRAMAS TO FOLLOW VAMANA[88]

(Ca. Sū. 15-14)

I. *Dhūmapāna* is indicated :
- i. *Ṣnaihika*
- ii. *Vairecanic*
- iii. *Śamana*

II Following are to be avoided[89] : (Ca. Sū. 15-15)

i. *Uccāccabhāṣya* (Loud speaking)
ii. *Atyaśana* (over-eating)
iii. *Atisthāna* (continued sitting)
iv. *Aticaṅkramaṇa* (Too much walking)
v. *Krodha* (Anger)
vi. *Śoka* (Anxiety)

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88. योगेन तु खल्वेनं छर्दितवन्तमभिसमीक्ष्य सुप्रक्षालित-
पाणिपादास्यं मुहूर्तमाश्वास्य, स्नैहिक वैरेचनिकोपशमनीयानां
धूमानामन्यतमं सामर्थ्यत: पाययित्वा ॥ (CS. Su. 15-14)

89. उच्चैर्भाष्यमत्यासनमतिस्थानमतिचङ्क्रमणंक्रोधशोक-
हिमातपावश्यायातिप्रवातान् यानयानं ग्राम्यधर्ममस्वपनं
निशि दिवास्वप्नं विरुद्धाजीर्णासात्म्याकालप्रमितातिहीन-
गुरुविषमभोजनवेगसंधारणोदीरणमिति भावानेतान्
मनसाऽप्यसेवमान: सर्वमहो गमयस्वेति। (CS. Su. 15/15)

vii. *Śīta* and *Santāpa* (heat and cold)
viii. *Pravāta* (open air)
ix. *Yānayāna* (Too much use of vehicles)
x. *Maithuna* (Coitus)
xi. *Rātri Jāgaraṇa* (Night arousal)
xii. *Vegavidhāraṇa* (Retention of natural urges)

SAṀSARJANA KRAMA :

As *Vamana* temporarily diminishes the *Agni*, it has to be revived with the help of appropriate diet schedule. Caraka (Cs. Si. - 1) suggests *Peyā* and *Vilepi* in a sequence. He (Cs. Sū. 15) describes in detail the following *Saṁsarjana* schedule for 7 days :

SAṀSARJANA KRAMA

Days	Annakāla	Pradhāna Śuddhi	Madhya Śuddhi	Hīna Śuddhi
Ist day	1. Morning	-	-	-
	2. Evening	Peyā	Peyā	Peyā
IInd day	1. Morning	Peyā	Peyā	Vilepī
	2. Evening	Peyā	Vilepī	Kṛtākṛta Yūṣa
IIIrd day	1. Morning	Vilepī	Vilepī	Kṛtākṛta Rasa
	2. Evening	Vilepi	Akṛta Yūṣa	Normal diet
IVth day	1. Morning	Vilepī	Kṛta yuṣa	do
	2. Evening	Akṛta yūṣa	Akṛta Māṃsa Rasa	do
Vth day.	1. Morning	Kṛta yūṣa	Kṛta Māṃsa Rasa	do
	2. Evening	Kṛta yūṣa	Normal diet	do
VIth day	1. Morning	Akṛta Māṃsa Rasa	do	do
	2. Evening	Kṛta Māṃsa Rasa	do	do
VIIth Day	1. Morning	Kṛta Māṃsa Rasa	do	do
	2. Evening	Normal diet	do	do

VIRECANA KARMA

Virecana is the next major *Pradhāna karma* included under *Pañca Karma* therapy. *Virecana* means to expel out the *Doṣas* through *Adhobhāga* (anal passage). By this route the *Doṣas* can be eliminated by *Nirūha Vasti* also but *Nirūha Basti* has no powers of *Adhobhāga haraṇa*. And so *Nirūha Basti* can not be included under *Virecana karma*. *Virecana* expels out the *Āmāśayādi Dosas* dragging them towards the *Adhobhāga* through the *Guda*.

Āmāśaya is the specific seat of *Pitta* and *Kapha Doṣas*. Though *Virecana* is the specific therapy for *Pitta Doṣa*, it may also be used for eliminating *Kapha Doṣa*. *Virecana* expels out the *Pitta* from the *Āmāśaya*. It means *Virecana* wins the *Pitta Doṣa* from all over the body. It may be pointed out that *Vamana* is a stressful process but *Virecana* is a painless procedure. Moreover, *Virecana* has lesser possibilities of complications and even if so, they are less dangerous.

VIRECANA DRUGS

The *Virecana* drugs have all the properties of *Vamana* drugs. *Virecana* is the principal property of *Pṛthvī* and *Jala Mahābhuta*. Therefore the action of *Virecana* drugs is *Adhobhāga haraṇa*. However, the following *Virecana* drugs described by Caraka (CS. Sū. 25-39) have been given preference for different degrees of *Virecana karmas.*

i. *Sukha Virecana-Trivṛta* root[90]

ii. *Mṛdu Virecana-Āragvadha*

iii. *Tīkṣṇa Virecana-Snuhī* milk

In Caraka Kalpasthāna *Śyāmā, Trivṛta, Āragvadha, Lodhra, Snuhī, Saptalā, Śaṇkhinī, Dantī* and Dravantī *Kalpas* are described in separate chapters for *Virecana*.

Suśruta describes the following drugs with priority for *Virecana* (SS. Sū. 44-1, 2).

i. Among roots *(Mūla Virecana)-Śyāma Trivṛta.*

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90. त्रिवृत् सुखविरेचनानां, चतुरङ्गुलो मृदुविरेचनानां,
स्नुक्पयस्तीक्ष्णविरेचनानां........... । (CS. Su. 25/39)

ii. Among barks *(Twak Virecana)-Tilwaka.*

iii. Among fruits *(Phala Virecana)-Harītakī.*

iv. Among oils *(Taila Virecana)-Eraṇḍa.*

v. Among juices *(Swarasa Virecana)-Kārvellaka.*

vi. Among Milks *(Paya Virecana)-Sudhā (Snuhi)*

Caraka also describes in general the following *Virecana* drugs (Cs. Sū. 1).

i. *Mūlinī Drugs*-Hastidanta, Śyāma Tṛivṛta, Danti, Saptalā, Indrāyana etc.

ii. *Phalīnī Drugs*-Śaṅkhinī, Madhuyaṣṭi, Karañja, Abhayā, Kampillaka, Āragvadha etc.

iii. *Lavaṇa*-Saindhawa, Souwarcala.

iv. *Kṣīra Virecana*-Snuhī, Arka.

v. *Pakwāśaya Virecana*-Trivṛtta, Triphalā, Dantī, Neelinī, Drākṣā, Āragvadha etc.

vi. *Bhedanīya drugs*-Trivṛta, Arka, Eraṇḍa, Swarṇa Kṣīrī, Citraka etc.

vii. *Virecanopaga*-Drākṣā, Gambhārī, Fālasā, Abhayā, Āmalaka, Bībhītaka, Badara etc.

viii. *Purīṣa Virajanīya*-Jambu, Twaka, Madhuyaṣṭi, Tila, Bhriṣṭa Mṛt, Payasyā etc.

Śāraṅgadhara mentions the following classification of *Virecana* drugs (Sha. Pū. Khaṇḍ. 4-3 to 6) in reference to Four types of *Adhobhāga hara karmas.*

i) *Anulomana* viz., Harītakī

ii) *Sraṇsana* viz., Āragvadha

iii) *Bhedana* viz., Kaṭukā

iv) *Recana* viz., Trivṛtta.

The *Virecana* may be of following two types depending upon its physical characteristics :

i) *Snigdha Virecana* ii) *Rūkṣa Virecana.*

However, in general the pharmacodynamic properties of Virecana drugs are the following :

(i) *Uṣṇa*
(ii) *Tīkṣṇa*
(iii) *Sūkṣma*
(iv) *Vyawāyi*
(v) *Vikāsī*
(vi) *Jala* and *Pṛthvī* *Mahābhūta Viśeṣa*

INDICATIONS OF VIRECANA KARMA[91]

(Cs. Si. 2/13)

1. *Jwara* (Fever)
2. *Kuṣṭha* (Skin diseases)
3. *Prameha* (Diabetes)
4. *Ūrdhwaga Raktapitta* (Anal and urethrovaginal haemorrhage)
5. *Bhagandara* (Fistula-in-ano)
6. *Arśa* (Piles)
7. *Bradhna* (Scroto inguinal swelling)
8. *Plihā doṣa* (Splenic disorders)
9. Gulma (Abdominal swellings)
10. *Arbuda* (Tumors)
11. *Galgaṇḍa* (Goitres)
12. *Granthi* (Lymphadenitis)
13. *Gara* (Poisoning)
14. *Visūcikā* (Cholera)
15. *Alasaka* (Cholera sicca)
16. *Mūtrāghāta* (Anuria and retention)
17. *Kṛmikoṣṭha* (Helminthiasis)
18. *Visarpa* (Erysipelas)
19. *Pāṇḍu* (Anaemia)
20. *Śirośūla* (Headache)
21. *Pārśwa Śūla* (Chest pain)
22. *Udāvarta* (Constipation)
23. *Netradāha* (Burning eyes)
24. *Āsya Dāha* (Burning mouth)
25. *Hṛdroga* (Heart disease)
26. *Byaṅga* (Pigmented spots on face)

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91. शेषास्तु विरेच्याः; विशेषतस्तु कुष्ठज्वरमेहोर्ध्वरक्तपित्तभगन्दरोदरार्शोब्रध्न-प्लीहगुल्मार्बुदगलगण्डग्रन्थिविसूचिकालसकमूत्राघातक्रिमिकोष्ठविसर्पपाण्डुरोगशिरःपार्श्वशूलोदावर्तनेत्रास्यदाहहृद्रोगव्यङ्गनीलिकानेत्रनासिकास्यस्रवणहलीमकश्वासकास-कामलापच्यपस्मारोन्मादवातरक्तयोनिरेतोदोषतैमिर्यारोचकविपाकच्छर्दिश्वयथूदरविस्फोट-कादयः पित्तव्याधयो विशेषेण महारोगाध्यायोक्ताश्च; एतेषु हि विरेचनं प्रधानतम-मित्युक्तमग्न्युपशमेऽग्निगृहवत् ॥ (CS. Si. 2/19)

27. *Nilikā* (Blue pigmentation)
28. *Aruci* (Anorexia)
29. *Netrasrāwa* (Lacrimation)
30. *Nāsā srāwa* (Rhinorrhoea)
31. *Halīmaka* (Chronic jaundice)
32. *Śwāsa* (Asthma)
33. *Kāsa* (Cough)
34. *Kāmalā* (Jaundice)
35. *Apacī* (Cervical adenitis)
36. *Apasmāra* (Epilepsy)
37. *Unmāda* (Insanity)
38. *Vāta Rakta* (Gout, Leprosy)
39. *Yonidoṣa* (Gynaec disorders)
40. *Retodoṣa* (Male sexual disorders)
41. *Timira* (Cataract)
42. *Udara* (Gastro-intestinal disorders)
43. *Avipāka* (Indigestion)
44. *Chardi* (Vomiting)
45. *Visphoṭa* (Blisters)
46. *Pakwāśayaruja* (Pain in lower abdomen)
47. *Vivandha* (Constipation)
48. *Vidradhi* (Abscess)
49. *Swayathu* (Oedema)
50. *Śastra Kṣata, Kṣāra Agni Dagdha* (Burns and Injuries)
51. *Duṣṭa Vraṇa* (Septic wounds)
52. *Akṣipāka* (Eye inflammation)
53. *Aviṣyanda* (Conjunctivitis)
54. *Kāca* (Cataract)
55. *Guda Dāha* (Burning Anus)
56. *Meḍhra dāha* (Burning urethra)
57. *Nāsādāha, Karṇa dāha* (Burning ear nose)
58. *Ānāha* (Constipation and flatulance)
59. *Ślipada* (Filariasis)
60. *Stanya Doṣa* (Lactation disorders)
61. *Hrillāsa* (Salivation)

CONTRAINDICATION OF VIRECANA KARMA[92]

(CS. Si.2/12)

1. *Subhaga* (Tender)
2. *Kṣataguda* (Anal injury)

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92. तत्र सुभगस्य सुकुमारोक्तो दोषः स्यात्, क्षतगुदस्थ क्षते गुदे प्राणोपरोधकरीं रुजां

3. *Muktanāla* (Prolapse of Rectum)
4. *Adhoga Raktapitta* (Haemorrhage)
5. *Laṅghita* (Fasted)
6. *Durbalendria* (Weak senses)
7. *Alpāgni* (Weak digestion)
8. *Nirūha* (Enemata)
9, *Kāmādi Byagra* (Sexual stimulation)
10. *Ajirṇi* (Indigestion)
11. *Nava jwara* (Acute fever)
12. *Madāttyaya* (Alcoholism)
13. *Ādhmāna* (Constipation, flatulance)
14. *Śalyārdita* (Operated)
15. *Avihata* (Injured)
16. *Atisnigdha* (Excess oleation)
17. *Atirūkṣa* (Excess dryness)
18. *Dāruṇa Koṣṭha* (Heavily constipated)
19. *Kṣatakṣīṇa* (Emaciating chest disease)
20. *Atisthūla* (Obese)
21. *Atikṛśa* (Cachexic)
22. *Bāla-Vṛddha* (child, old)
23. *Durbala* (weak)
24. *Śrānta* (tired)
25. *Pipāsita* (Thirsty)
26. *Karmabhāra Adhwahata* (Tired)
27. *Upwāsita* (Fasted)
28. *Maithuna Prasakta* (Excess coitus)
29. *Adhyayana Prasakta* (Excess study)
30. *Vyāyāma Prasakta* (Excess exercise)
31. *Cintā Prasakta* (Anxious)
32. *Kṣāma* (Neurasthenic)
33. *Garbhiṇī* (Pregnant)
34. *Nava Prasūtā*

जनयेत्, मुक्तनालमतिप्रवृत्त्या हन्यात्, अधोभागरक्तपित्तिनं तद्वत्, विलङ्घित-दुर्बलेन्द्रियाल्पाग्निनिरुढा औषधवेगं न सहेरन्, कामादिव्यग्रमनसोन प्रवर्तते कृच्छ्रेण वा प्रवर्तमानमयोगदोषान् कुर्यात्, अजीर्णिन आमदोषः स्यात्, नवज्वरिणोऽविपक्वान् दोषान् न निर्हरेद् वातमेव च कोपयेत्, मदात्ययितस्य मद्यक्षीणे देहे वायुः प्राणोपरोधं कुर्यात्, आध्मातस्याधमतो वा परीषकोष्ठे निचितो वायुर्विसर्पन् सहसाऽऽनाहं तीव्रतरं मरणं वा जनयेत्, शल्यार्दिताभिहतयोः क्षते वायुराश्रितो जीवितं हिंस्यात्, अतिस्निग्धस्यातियोगभयं भवेत्, रूक्षस्य वायुरङ्गप्रग्रहं कुर्यात्, दारुणकोष्ठस्य विरेचनोद्धता दोषा हृच्छूलपर्वभेदानाहाङ्गमर्दच्छर्दिमूर्च्छाक्लमाञ्जनयित्वा प्राणान् हन्युः, क्षतादीनां गर्भिण्यन्तानां छर्दनोक्तो दोषः स्यात्; तस्मादेते न विरेच्याः ॥

(CS. Si. 2/12)

(Puerperium)

35. *Nava Pratiśyāya* (Acute corrhyza)
36. *Rajayakṣmā* (Tuberculosis)
37. *Atisāra* (Diarrhoea)
38. *Kṣudhita* (Hungry)
39. *Nityadukhita* (Anxiety)
40. *Hṛdaya Rogī* (Heart disease)
41. *Bhayabhīta* (Frightened)

PROCEDURE OF VIRECANA KARMA

Virecana is an easiest and the least complicated procedure in *Pañca Karma* therapy. Following drugs are commonly used in *Virecana* singly or in compounds :

THE DRUGS

(i) *Trivṛtta Cūrṇa, Swarṇapatrī Cūrṇa, Harītakī, Triphalā.*

(ii) *Eraṇḍa Taila,* (iii) *Abhayāriṣṭa,* (iv) *Jayapālādi Yoga,* (v) *Aświakañcukī Rasa, Jalodarāri Vaṭi, Nārāca Rasa, Icchābhedi Rasa.*

The following drugs are used in Atiyoga of Virecana.

i) *Karpūra Rasa,* ii) *Jātiphalādi Cūrṇa,*

iii) *Bilvādi Cūrṇa*

THE PATIENTS[93]

The patients for *Virecana* should be examined and selected (Cs. Sū. 15-15) in regard to :

(A)
i. *Doṣa* (Humors)
ii. *Bheṣaja* (Drugs)
iii. *Deśa* (Climate)
iv. *Kāla* (Season)
v. *Bala* (Strength)
vi. *Śarīra* (Body constitution)
viii. *Āhāra* (diet)
viii. *Sātmya* (Adaptability)
ix. *Satwa* (Mind)
x. *Prakṛti* (Constitution)
xi. *Vaya* (age) etc.

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93. तच्च प्रयोगसौष्ठवमुपदेष्टुं यथावत, न हि कश्चिदस्ति य एतदेवमुपदिष्टमुपधारयितुमुत्सहेत, उपधार्य वा तथा प्रतिपन्तुं प्रयोक्तुं वा; सूक्ष्माणि हि दोषभेषज देशकाल बल शरीराहारसात्म्यसत्त्वप्रकृतिवय सामवस्थान्तराणि।

(CS. Su. 15/5)

(B) Following should be examined daily in these patients undergoing therapy (Yoga Rat. Nāḍi. 1) :

i. *Nāḍi* (Pulse)	v. *Śabda* (Ear)
ii. *Mūtra* (Urine)	vi. *Sparśa* (Skin)
iii. *Mala* (Stool)	vii. *Dṛk* (Eyes)
iv. *Jihwā* (Tongue)	viii. *Ākṛti* (Appearance)

This can be further elucidated as below :

S. No.	Factors to be Considered	Awasthāntara
1.	*Doṣa*	A. *Kṣaya, Vṛddha, Sama*
		B. *Ūrdhwagati, Adhogati, Tīryaggati*
		C. *Swasthāna, Parasthāna*
		D. *Swatantra, Paratantra*
		E. *Pṛthak, Saṇsarga, Sannipāta*
		F. *Rasādi Dhātu Saṇyukta, Asaṇyuktā*
		G. *Purīṣa Mūtrādi Mala miśrīta, Amiśritā*
		H. *Amśāṃśa, Kalpanā* etc.
2.	*Bheṣaja*	A. *Taruṇa, Vṛddha, Madhya*
		B. *Sakṛta, Akṛta*
		C. *Śubhāśubha Deśotpanna*
		D. *Aṅga Viśeṣa* (Part of Medicinal value)
		E. *Kaṣāya Kalpanā*
		F. *Rasa, Vīrya, Vipāka Prabhāvādi.*
		G. Combination of drugs.
3.	*Deśa*	A. *Bhūmi-Ānūpa, Jāṅgala, Sādhāraṇa.*
		B. *Ātura-Prakṛti, Vikṛti, Sāra, Saṃhanana, Pramāṇa, Sātmya, Satwa, Āhāra-Śakti, Vyāyāma-Śakti* and *Vaya* etc.
4.	*Kāla*	A. *Saṃvatsara*
		B. *Ṣaḍṛtus* and *Ṛtu Sandhis*

	C. Two *Ayanas, Ādāna* and *Visarga Kāla*
	D. *Divā Pravibhāgas, Prātaḥ, Pūrvāhṇa, Madhyāhṇa, Aparāhṇa* etc.
5. *Bala*	A. *Mahat, Madhya, Alpa*
	B. *Sahaja, Kālakṛt, Yuktikṛt, Vayaḥkṛt,* etc.
6. *Śarira*	A. *Kṛśa, Sthūla, Sama*
	B. *Sasāra, Sārahīna*
	C. *Mṛdu, Kaṭhora, Sukumāra* etc.
	D. *Hraswa, Madhya, Vṛhada*
	E. *Swastha Śarīra, Aswastha Śarira.*
7. *Āhara*	A. *Bhakṣya, Peya, Lehya, Coṣya* etc.
	B. *Prakṛti, Karaṇa, Deśa, Kāla, Saṃyoga* etc.
8. *Sātmya*	A. *Deśa, Ṛtu, Roga, Doṣa*
	B. *Doṣa, Prakṛti, Deśa, Ṛtu, Vyādhi* and *Oka Sātmya.*
	C. *Jāti, Roga, Ātura, Dhānya, Rasa, Deśa, Ṛtu, Udaka Sātmya etc.*
	D. *Asātmya Vicāra.*
9. *Satwa*	A. *Sātwika, Rājasa, Tāmasa*
	B. *Bhīru, Sahiṣṇu*
	C. *Utkṛṣṭa Bala, Nimna Bala, Madhya Bala.*
	D. *Śoka, Bhaya, Krodha, Lobha, Moha, Harṣa, Viṣāda, Irṣyā, Sukha, Dukhādi.*
	E. *Brahma Kāyādi* 7 *Sātwika; Āsura Satwādi* 6 *Rājas* and *Pāśawa Kāyādi* 3 *Tāmasa Kayās.*
	F. *Raja, Tama Doṣa*
10. *Prakṛti*	A. *Garbha Śārīra Prakṛti viz,* 7 *Doṣa Prakṛtis.*
	B. *Jāta Śārira Prakṛtis Jāti-Kula Vaya* etc.

11. *Vaya* A. *Bālya, Madhya, Vṛddhāwasthā* etc.

SCHEDULE OF THE THERAPY

I.

		Snehana
15th day		*Swedana*
Virecana		*Vamana*
Swedana	7 days	
7 days		
Snehana		*Saṃsarjan Krama*
	Normal diet	

II.

Vamana--------------------------*Saṃsarjana Krama*

Virecana

Swedana-----------------------*Snehana*

(12th, 13th, 14th, 15th)	(9th, 10th, 11th, 12th)
(Total 4 days)	(Total 4 days)

III.

Snehapāna

	Virecanopag drug
3 days rest	viz. *Snigdha, Drava, Usna,*
(CS. Sū. 13-80)	*Māṃsa Rasa, Amla, Phala Rasa*

VIRECANA

GENERAL PRECAUTIONS

Kaphakara diets should be avoided. If *Kapha* is lesser than normal then *Virecana* becomes adequately effective.

If *Kapha*[94] becomes more than normal, then *Virecana* drugs may produce *Vamana* (CS. Si. 1-9).

Preferably during *Virecana Karma* the stomach should be empty in contrast to *Vamana* where stomach has to be full.

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94. श्लेष्मोत्तरश्छर्दयति ह्यदु:खं विरिच्यते मन्दकफस्तु सम्यक्॥
अध: कफेऽल्पे वमनं विरेचयेद्विरेचनं वृद्धकफे तथोर्ध्वम्। (CS. Si. 1/9)

i. Empty stomach __________ *Virecana*

Full stomach __________ *Kapha* Increases __________ *Vamana*

DETERMINATION OF DOSAGE

S. No. Drugs	Mṛdu Koṣṭhī	Madhya Koṣṭhī	Krūra Koṣṭhī
1. *Eraṇḍa Sneha*	½-2 *Tola*	2-5 *Tola*	5-10 *Tola*
2. *Trivṛtta*	1-3 *Masa*	3-6 *Masa*	½-1 *Tola*
3. *Drākṣā*	1-2 *Tola*	2½-5 *Tola*	5-10 *Tola*
Āragvadha			
Harītakī Phāṇṭa			
Triphalā Kwātha			
4. *Jayapāla, Snuhī*	½-1 *Ratti*	1-2 *Ratti*	4-8 *Ratti*
5. *Isabgola*	3 *Masa*	3-6 *Masa*	6 *Tola*

Śāraṅgadhara describes the following dosage schedule

(A) Dose of Kwātha

i. *Uttama Mātrā* 2 *Pala* (8 Tola)

ii. *Madhyama Mātrā* 1 *Pala* (4 Tola)

iii. *Hīna Mātrā* ½ *Pala* (2 Tola)

(B) Dose of *Kalka* and *Cūrṇa*

i. *Uttama Mātrā* 4 *Tola*

ii. *Madhyama Mātrā* 2 *Tola*

iii. *Hīna Mātrā* 1 *Tola*

DOṢA-WISE USE OF DRUGS

(a) *Vātika Doṣa=Trivṛtta+Saindhava+Śuṇṭhī Cūrṇa.*

(b) *Paittika Doṣa=Trivṛtta Cūrṇa; Drākṣā Kwātha.*

(c) *Kaphaja Doṣa=Triphalā Kwātha; Gomūtra and Trikaṭu.*

DEGREE OF ŚODHANA BY VIRECANA[95]

(CS.Si. 1 : 13)

S. N.	Degree of Śodhana	No. of motions	Amount of Doṣas expelled
1.	*Pravara*	30	4 *Prastha*
2.	*Madhyama*	20	2 *Prastha*
3.	*Jaghanya*	10	1 *Prastha*

FEATURES OF SAMYAKA (ADEQUATE) VIRECANA[96]

(Cs. Sū. 16/6)

1. *Sroto Viśuddhi*
2. *Indriya prasāda*
3. *Laghutā*
4. *Agnivṛddhi*
5. *Anāmayatwa*
6. *Vāta-pitta-kapha* elimination
7. *Vātānulomana*
8. Absence of symptoms of *Ayoga* of *Virecana.*

FEATURES OF AYOGA (INADEQUATE) VIRECANA[97]

(Cs. Sū. 16/7-8)

1. *Kapha prakopa*
2. *Pitta prakopa*
3. *Vāta prakopa*
4. *Agnimāndya*
5. *Gourawa*
6. *Pratiśyāya*
7. *Tandrā*
8. *Chardi*
9. *Aruci*
10. *Vāta pratilomana*
11. *Dāha*
12. *Hṛdaya Aśuddhi*
13. *Kukṣi Aśuddhi*
14. *Kaṇḍu*
15. *Viṭsaṅga*
16. *Mūtrasaṅga*
17. *Piḍikā*

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95. जघन्यमध्यप्रवरेषु वेगाश्चत्वार इष्टा वमने षडष्टौ।
दशैव द्वित्रिगुणा विरेके प्रस्थस्तथा द्वित्रिचतुर्गुणाश्च॥ (CS. Si. 1/13)

96. दैर्बल्यं लाघवं ग्लानिर्व्याधीनामणुता रुचिः।
हृद्वर्णशुद्धिः क्षुत्तृष्णा काले वेगप्रवर्तनम॥
बुद्धीन्द्रियमनः शुद्धिर्मारुतस्यानुलोमता।
सम्यग्विरिक्तलिङ्गानि कायाग्नेश्चानुवर्तनम्॥ (CS. Su. 6/6)

97. ष्ठीवनं हृदयाशुद्धिरुत्क्लशः श्लेष्मपित्तयोः।
आध्मानमरुचिश्छर्दिरदौर्बल्यमलाघवम्॥

FEATURES OF ATIYOGA[98] (EXCESS) VIRECANA

(Cs. Sū. 16/9-10)

1. *Kaphakṣayaja Vikāra*
2. *Pitta Kṣayaja Vikāra*
3. *Vāta Kṣayaja Vikāra*
4. *Supti*
5. *Aṅgamarda*
6. *Klama*
7. *Bepathu*
8. *Nidrā*
9. *Dourbalya*
10. *Tamaḥpraveśa*
11. *Unmāda*
12. *Hikkā*
13. *Mūrchā*
14. *Gudabhramśa*
15. *Śūla*
16. *Sweda Udaka Niḥsaraṇa* (except *Kapha* and *Pitta*)
17. *Lohita Udaka Niḥsaraṇa* (except *Kapha-Pitta*)
18. *Udakasrāwa*
19. *Medokhaṇḍawata Srāwa*
20. *Tṛṣṇā*
21. *Bhrama*
22. *Netrapraveśa*
23. *Raktakṣayaja Vikāra*
24. Other complications.

VYĀPADA[99] (COMPLICATIONS) OF VIRECANA

(Cs. Sū. 15/16)

a) *Ādhmāna* (tympanitis)
b) *Parikartikā* (cutting pain)
c) *Parisrāwa* (discharge)
d) *Hṛdgraha* (cardiac discomfort)
e) *Gātragraha* (stiffness)
f) *Jiwādāṇa* (haemorrhage)
g) *Vibhramśa* (confusion)
h) *Stambha* (stiffness)

जंघोरुसदनं तन्द्रा स्तैमित्यं पीनसागमः ।
लक्षणान्यविरिक्तानां मारुतस्य च निग्रहः ॥ (CS. Su. 16/7-8)

98. विट्पित्तकफवातानामागतानां यथाक्रमम् ।
परं स्रवति यद्रक्तं मेदोमांसोदकोपमम् ॥
निःश्लेष्मपित्तमुदकं शोणितं कृष्णमेव वा ।
तृष्यतो मारुतार्तस्य सोऽतियोगः प्रमुह्यतः ॥ (CS. Su. 16/9-10)

99. आध्मानं परिकर्त्तिका परिस्रावो हृदयोपसरणमङ्गग्रहो जीवादानं विभ्रंशः स्तंभः क्लमश्चेत्युपद्रवाः ॥ (CS. Su. 15/16)

i) *Klama* (neurasthenia)

j) Other complications.

I. a, c, d, e, g, i, j = due to inadequate *Virecana*

II. b, f, g = due to excess *Virecana*.

BASTI KARMA

Basti is the next major procedure in *Pañca Karma* therapy. As a matter of fact *Basti* is the most important item among the *Saṁśodhana* procedures. *Basti* enjoys the same significance in *Pañca Karma* therapy as the *Pañca Karma* therapy itself enjoys in *Cikitsā* in general. The classical literature attaches a great significance to this form of treatment and points out a vivid scope of its applicability. However, the term *Basti* is derived from the fact that the *Basti Yantra* or the apparatus used for introducing the medicated materials is madeup of *Basti* or animal urinary bladder. Thus as also described by Suśruta and others (SS, Ci. 35-14, 15, 16; AH. Sū. 19-I; A. D. on AH. Sū. 19-1; Sha. Uttar. 5-1) all those drugs or medicaments which are introduced through the rectum with the help of *Basti* (*Basti Yantra* made up of animal urinary bladder) are designated as *Basti*. Generally a *Basti* is applied through the rectum though it may also be applied per urethra. In such cases the term *Uttar Basti* is applied. Though in a generic sense, the term *Basti* is applied for all kinds of *Bastis* such as *Nirūha Basti, Anuvāsana Basti, Uttar Basti, Śiro Basti* etc., the Caraka's description of *Basti*, as interpreted by Cakrapāṇi and Jejjaṭa, appears specific for *Nirūha Basti* (CS. Si. 7-1).

Depending upon the use of different drugs, *Basti* effects *Saṁśodhana* of *Doṣas*. It has also *Saṁśamana* effects. The other effects of *Basti* may be restoration of semen, anabolism in emaciated persons, *Karṣana* in obese persons, improvement in vision, prevention of aging, improvement in lustre, strength and healthful longevity. Thus *Basti* in its different forms has a very wide application.

Though *Basti* therapy has its scope in all kinds of ailments implicating different types of *Doṣas, Duṣyas* and *Adhiṣṭhānas*; *Basti* is supposed to be the principal (specific) treatment for *Vātic* diseases (AH. Sū. 1-25). The relative importance of *Vāta* is

already known as it has predominent influence on the three principal routes of diseases namely the *Śākhā*, *Koṣṭha* and the *Marma*. Moreover *Vāyu* is responsible for the formation, communication and spread of *Sweda, Mala, Mūtra, Kapha* and other biological substances in the body. *Basti*, being the principal treatment for such an important factor, is considered the therapeutic procedure of maximum importance. This is why *Basti* is said to be the half of the whole treatment[100] and sometimes a complete treatment (CS. Si. 1-40, 41). This so wide scope of *Basti* therapy is covered by varieties of *Bastis* that can be applied in different states. The following classification of *Basti* may highlight this fact.

CLASSIFICATION OF BASTI

1. Anatomical classification.
    - (a) *Pakwāśayagata* (Rectal)
    - (b) *Garbhśayagata* (Uterine)
    - (c) *Mūtrāśayagata* (Urethrovesical)
    - (d) *Vraṇagata* (Wound/Abscess)
2. Pharmaceutical classification[101] (SS. Ci. 35-18)
    - (a) *Nirūha Basti (Kaṣāya Pradhāna)*
    - (b) *Anuwāsana Basti (Sneha Pradhāna)*
        - (i) *Sneha Basti*
        - (ii) *Mātrā Basti*
        - (iii) *Anuwāsana Basti*

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100. तस्माच्चिकित्सार्द्धमिति ब्रुवन्ति सर्वां चिकित्सामपि बस्तिमेके ॥

(CS. Si. 1/40)

101. तत्र द्विविधो बस्तिः—नैरूहिकः, स्नैहिकश्च। आस्थापनं, निरूह इत्यनर्थान्तरं; तस्य विकल्पो माधुतैलिकः; तस्य पर्यायशब्दो यापनी, युक्तरथः, सिद्धबस्तिरिति। स दोषनिर्हरणाच्छरीरनीरोहणाद्वा निरूहः, वयःस्थापनादायुःस्थापनाद्वा आस्थापनम्। माधुतैलिकविधानं च निरूहोपक्रमचिकित्सिते वक्ष्यामः। यथाप्रमाणगुणविहितः स्नेहबस्तिविकल्पोऽनुवासनः पादाव (प) कृष्टः। अनुवसन्नपि न दुष्यत्यनुदिवसं वा दीयत इत्यनुवासनः तस्यापि विकल्पोऽर्धार्धमात्रावकृष्टोऽपरिहार्यो मात्राबस्तिरिति॥ (SS. Ci.35/18)

3. Pharmacological classification.[102]

I. According to Suśruta (SS. Ci. 35-19)

(a) *Śodhana Basti*

(b) *Lekhana Basti*

(c) *Snehana Basti*

(d) *Bṛṃhaṇa Basti*

II. According to Vāgbhaṭṭa[103] (AH. Sū. 19-61)

(a) *Utkleṣaṇa Basti*

(b) *Doṣahara Basti*

(c) *Śamana Basti*

III. According to Śāraṅgadhara

(a) *Utkleśaṇa*

(b) *Doṣahara*

(c) *Śodhana*

(d) *Śamana*

(e) *Lekhana*

(f) *Bṛṃhaṇa*

(g) *Picchila*

(h) *Deepana*

IV. According to Caraka (CS. Si, 8)

(a) *Vātaghna Basti*

(b) *Bala Varṇakṛt Basti*

(c) *Snehanīya Basti*

(d) *Śukrakṛt Basti*

(e) *Kṛmighna Basti*

(f) *Vṛṣatwa Kṛta Basti.*

V. According to Suśruta

(a) *Śodhana*

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102. निरूहः शोधनो लेखी स्नैहिको बृंहणो मतः। (SS. Ci. 35/9)

103. उत्क्लेशनं शुद्धिकरं दोषाणां क्रमात्।
त्रिधैव कल्पयेद्बस्तिमित्यन्येऽपि प्रचक्षते॥ (AH. Su. 19/61)

(b) *Grāhī*
(c) *Śukra Vṛddhikṛt*
(d) *Bṛṃhaṇa* etc.

4. According to the number of *Basti* to be used :

On the basis of the number of *Basti* administered in a sequence the following terms are applied :

(a) *Karma Basti* where 30 *Bastis* are applied according to the schedule shown in Table A below.

(b) *Kāla Basti* where 16 *Bastis* are applied as per schedule shown is Table B below.

(c) *Yoga Bastis* are given in a sequence as per schedule shown in Table C.

(A) Schedule of *Karma Basti* (18S + 12N = 30)

1 S	2 N	3 S	4 N	5 S	6 N
7 S	8 N	9 S	10 N	11 S	12 N
13 S	14 N	15 S	16 N	17 S	18 N
19 S	20 N	21 S	22 N	23 S	24 N
25 S	26 S	27 S	28 S	29 S	30 S

N = *Nirūha Basti*
S = *Sneha Basti*

(B) Schedule of *Kāla Basti* (10S + 6 N = 16)

1 S	2 N	3 S	4 N
5 S	6 N	7 S	8 N

9 S	10 N	11 S	12 N
13 S	14 S	15 S	16 S

N = *Nirūha Basti*

S = *Sneha Basti*

(C) Schedule of *yoga Basti* (5S + 3 N = 8)

1 S	2 N	3 S	4 N
5 S	6 N	7 S	8 S

N = *Nirūha Basti*

S = *Sneha Basti*

5. Classification according to the Nomenclature :

(A) *Yāpanā Basti* (CS. Si. 12-15)

(B) *Siddha Basti* (CS. Si. 10-3)

(C) *Prasṛta Yogikī Basti* (CS. Si. 8-2)

(D) *Dwādaśa Prasṛtiki Basti* (SS. Ci. 37-39)

(E) *Pādahīna Basti* (SS. Ci. 38-118)

(F) *Tīkṣṇa Basti*[104] (SS. Ci. 35-10)

(G) *Mṛdu Basti* (SS. Ci. 35-10)

(H) *Picchā Basti* (CS. Ci. 19-64 to 68)

(I) *Rakta Basti* (CS. Si. 8-26; CS. Si. 6-83).

Basically the *Basti* may be of two types : I. *Anuvāsana* (oleus) *Basti*, 2. *Nirūha* (coarse) *Basti*. The *Anuvāsana Basti* predominently consists of oleus substances while a *Nirūha Basti*

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104. मृदुर्बस्तिः प्रयोक्तव्यो विशेषाद्बालवृद्धयोः ।
तयोस्तीक्ष्णः प्रयुक्तस्तु बस्तिर्हिंस्याद् बलायुषी ॥ (SS. Ci. 35/10)

consists mainly of *Kaṣāyas* or decoctions of appropriate drugs. In most of the occasions a combination of both these types of *Bastis* is given except for fewer specific indications where one may have to adopt the single or continued use of one or the other type of these two *Bastis*. However, the general indications and contra-indications of *Basti* therapy are as follows :

INDICATIONS OF ĀSTHĀPANA BASTI[105, 106, 107]

(CS. Si. 2-16; SS. Ci. 35-5; AH. Sū. 19-23)

1. *Sarwāṅga roga* (systemic disease)
2. *Ekāṅga roga* (localised disease)
3. *Kukṣi roga* (abdominal diseases)
4. *Vātasaṅga* (retention of flatus)
5. *Mūtrasaṅga* (retention of urine)
6. *Malasaṅga* (retention of stools)
7. *Śukrasaṅga* (retention of semen)
8. *Balakṣaya* (loss of strength)
9. *Māṃsakṣaya* (muscle atrophy)
10. *Doṣa Kṣaya* (*doṣic* deficiency)

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105. गुल्मानाहखुडप्लीहशुद्धातीसारशूलिनः ॥
जीर्णज्वरप्रतिश्यायशुक्रानिलमल ग्रहान् ।
वर्ध्माश्मरीरजोनाशान् दारुणांश्चानिलामयान् ॥ (AH. Su. 19/2, 3)

106. तथा ज्वरातीसारतिमिरप्रतिश्यायशिरोरोगाधिमन्थार्दिताक्षेपकपक्षाघातैकाङ्गसर्वाङ्गरोगाध्मानोदरयोनिशूलशर्कराशूलवृद्ध्युपदंशानाहमूत्रकृच्छ्रगुल्मवातशोणितवातमूत्रपुरीषोदावर्तशुक्रार्तवस्तन्यनाशहृद्धनुमन्याग्रहशर्कराश्मरीमूढगर्भप्रभृतिषु चात्यर्थमुपयुज्यते ॥ (SS. Ci. 35/5)

107. शेषास्त्वास्थाप्याः; विशेषतस्तु सर्वाङ्गैकाङ्गकुक्षिरोगवातवर्चोमूत्रशुक्रसङ्गबलवर्णमांसरेतः क्षयदोषाध्मानाङ्गसुप्तिक्रिमिकोष्ठोदावर्तशुद्धातिसारपर्वभेदाभितापप्लीहगुल्मशूलहृद्रोगभगन्दरोन्मादज्वरब्रध्नशिरःकर्णशूलहृदयपार्श्वपृष्ठकटीग्रहवेपनाक्षेपकगौरवातिलाघवरजः क्षयार्तविषमाग्निस्फिग्जानुजङ्घोरुगुल्फपार्ष्णिप्रपदयोनिबाह्वङ्गुलिस्तनान्तदन्तनखपर्वास्थिशूलशोषस्तम्भान्त्रकूजपरिकर्तिकाल्पाल्पसशब्दोग्रगन्धोत्थानादयो वातव्याधयो विशेषेण महारोगाध्यायोक्ताश्च; एतेष्वास्थापनं प्रधानतममित्युक्तं वनस्पतिमूलच्छेदवत् ॥ (CS. Si. 2/16)

11. *Śukra Kṣaya* (seminal loss)
12. *Ādhmāna* (constipation)
13. *Aṅgasupti* (atonia)
14. *Kṛmikoṣṭa* (helminthiasis)
15. *Udāvarta* (reverse Peristalsis)
16. *Śuddhātisāra* (diarrhoea)
17. *Pārśwa bheda* (chest pain)
18. *Abhitāpa* (pyrexia)
19. Plīhadoṣa (splenic disease)
20. *Gulma* (abdominal swellings)
21. *Śūla* (pain)
22. *Hṛdroga* (heart disease)
23. *Bhagandara* (fistula-in-ano)
24. *Unmāda* (psychosis)
25. *Jwara* (fever)
26. *Bradhna* (scrotoinguinal swelling)
27. *Śiraḥ-Śūla* (headache)
28. *Karṇa Śūla* (earache)
29. *Hṛdaya Śūla* (cardiac pain)
30. *Pārśwa Śūla* (chest pain)
31. *Pṛṣṭha-Śūla* (backache)
32. *Kaṭi-śūla* (lumbago)
33. *Kampa* (tremors)
34. *Ākṣepa* (convulsions)
35. *Aṅga Gourawa* (heaviness)
36. *Atilāghawa* (lightness)
37. *Rājayakṣmā* (tuberculosis)
38. *Viṣamāgni* (disturbed digestion)
39. *Sphigaśūla* (pain in gluteal region)
40. *Jānuśūla* (pain in knee joint)

41. *Jaṅghā śūla* (painful legs)
42. *Ūruśūla* (chest pain)
43. *Gulpha śūla* (painful ankle)
44. *Pārśwa śūla* (chest pain)
45. *Prapāda śūla* (pain in limbs)
46. *Yoni śūla* (uterine pain)
47. *Bāhu śūla* (painful arms)
48. *Aṅguli śūla* (finger pain)
49. *Stana śūla* (pain in breast)
50. *Nakha śūla* (pain in nails)
51. *Pārśwa-asthi-śūla* (chest pain)
52. *Danta śūla* (toothache)
53. *Śopha* (oedema)
54. *Stambha* (stiffness)
55. *Āntra-kūjana* (gurgling Intestine)
56. *Parikartikā* (cutting pain)
57. *Vāta Vyādhi* (neurological disease)
58. *Jwara* (fever)
59. *Timira* (cataract)
60. *Pratiśyaya* (Corrhyza)
61. *Adhimantha* (glaucoma)
62. *Ardita* (facial paralysis)
63. *Pakṣāghāta* (paralysis)
64. *Aśmarī* (lithiasis)
65. *Upadaṇśa* (venerial disease)
66. *Vāta Rakta* (gout/leprosy)
67. *Arśa* (piles)
68. *Stanya Kṣaya* (loss of lactation)
69. *Manyāgraha* (neck rigidity)
70. *Hanugraha* (lock jaw)

71. *Mūḍha Garbha* (malpresented foetus)
72. *Mūtrakṛcchra* (dysuria)

CONTRAINDICATIONS OF ĀSTHĀPANA BASTI[108,109,110]

(CS. Si. 2-14; SS. Ci. 35-21; AH. Sū. 19-4, 5, 6)

1. Ajīrṇa (indigestion)
2. *Atisneha* (excess of oleation)
3. *Pītasneha* (having drunk ghee)
4. *Utkliṣṭa Doṣas* (aggravated)
5. *Alpāgni* (poor digestion)
6. *Yānaklānta* (tired)
7. *Atidurbala* (too weak)
8. *Kṣudhārta* (hungry)
9. *Tṛṣṇārta* (thirsty)
10. *Śramārta* (exhausted by work)
11. *Atikṛśa* (too emaciated)
12. *Bhuktabhakta* (one who has taken meal)
13. *Pītodaka* (having drunk water)
14. *Vāmita* (having vomited)
15. *Virikta* (having purged)
16. *Kṛtanasyakarma* (having snuffed)
17. *Kruddha* (angry)
18. *Bhīta* (frightened)
19. *Matta* (intoxicated)
20. *Mūrcchita* (fainted)
21. *Chardi Prasakta* (weakened due to vomiting)
22. *Niṣṭhīwana Prasakta* (spitting)
23. *Śwāsa Prasakta* (dyspnoeic)

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108. अनास्थाप्यास्त्वतिस्निग्धः क्षतोरस्को भृशं कृशः।
आमातिसारी वमिमान् संशुद्धो दत्तनावन॥
श्वासकासप्रसेकार्शोहिध्माध्मानाल्पवह्नयः।
शूनपायुः कृताहारो बद्धच्छिद्रोदकोदरी॥
कुष्ठी च मधुमेही च मासान् सप्त च गर्भिणी। (A. H. Su. 19/4, 5, 6)

109. अनास्थाप्यास्तु—अजीर्ण्यतिस्निग्धपीतस्नेहोत्क्लिष्टदोषाल्पाग्नियानक्लान्तातिदुर्बलक्षुत्तृष्णाश्रमार्तातिकृशभुक्तभक्तपीतोदकवमित विरिक्तकृतनस्तः कर्मक्रुद्ध-भीतमत्तमूर्च्छितप्रसक्तच्छर्दिनिष्ठीविकाश्वासकासहिक्काबद्धच्छिद्रोदकोदराध्मानालसक-विसूचिकामप्रजातामातिसारमधुमेहकुष्ठार्ताः॥ (CS. Su. 2/14)

110. तत्रोन्मादभयशोकपिपासारोचकाजीर्णार्शःपाण्डुरोगभ्रममदमूर्च्छाच्छर्दिकुष्ठमेहोदर-स्थौल्यश्वासकासकण्ठशोषशोफोपसृष्टक्षतक्षीणचतुस्त्रिमासगर्भिणीदुर्बलाग्न्यसहः बालवृद्धौ च वातरोगादृते क्षीणा नानुवास्या नास्थापयितव्याः॥
(SS. Ci. 35/21)

24. *Kāsa Prasakta* (cough)
25. *Hikkā-Prasakta* (hiccough)
26. *Baddha Gudodara* (intestinal obstruction)
27. *Chidrodara* (perforation)
28. *Dakodara* (ascites)
29. *Ādhmāna* (constipation)
30. *Alasaka* (Int. Obst.)
31. *Visūcikā* (cholera)
32. *Āmadoṣa* (indigestion toxicity)
33. *Āmātisāra* (dysentery)
34. *Prameha* (urinary disorders)
35. *Kuṣṭha* (skin diseases)
36. *Arśa* (piles)
37. *Pāṇḍu* (anaemia)
38. *Bhrama* (confusion)
39. *Arocaka* (anorexia)
40. *Unmāda* (Psychosis)
41. *Śokagrasta* (anxious)
42. *Sthoulya* (obesity)
43. *Kaṇṭhāśoṣa* (dryness of throat)
44. *Kṣatakṣīṇa* (chest injury)
45. *Garbhiṇi* (pregnant)
46. *Bāla, Vṛddha* (children, elders)
47. *Gudaśotha* (anal inflammation)
48. *Alpavarca* (constipated)
49. *Āmaprajāta* (prominent Āmāwasthā)
50. *Śopha* (oedema)

INDICATIONS OF ANUVĀSANA BASTI[111, 112, 113]

(CS. Si. 2-8, SS. Ci. 35-22; AH. Sū. 19-7, 8)

Following are the indications for *Anuvāsana Basti* in addition to those which are already mentioned under the indications for *Āsthāpana Basti* :

1. *Viśeṣa Rūkṣa*

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111. य एवास्थाप्यास्त एवानुवास्याः; विशेषतस्तु रूक्षतीक्ष्णाग्नयः केवलवातरोगार्ताश्चः
एतेषु ह्यनुवासनं प्रधानतममित्युक्तं मूले द्रुमप्रसेकवत्॥ (CS. Si. 2/19)

112. येऽनास्थाप्यास्तथा पाण्डुकामलामेहपीनसः॥
निरन्नप्लीहविड्भेदिगुरुकोष्ठकफोदराः।
अभिष्यन्दिभृशस्थूलकृमिकोष्ठाढ्यमारुता॥
पीते विषे गरेऽपच्यां श्लीपदी मलगण्डवान्। (A. H. Su. 19/7, 8)

113. तत्राभुक्तभक्तस्यानावृतमार्गत्वादूर्ध्वमतिवर्तते स्नेहः, नवज्वरपाण्डुरोगकामला-
प्रमेहिणां दोषानुत्क्लिश्योदरं जनयेत्, अर्शसस्याशांस्यभिष्यन्द्याध्मानं कुर्यात्,
अरोचकार्तस्यान्नगृद्धिं। (CS. Si. 2/18)

2. *Tīkṣṇāgni*
3. *Vāta Vyādhi*

CONTRAINDICATIONS OF ANUVĀSANA BASTI[114]

(CS. Si. 2-18; AH. Sū. 19-7, 8; SS. Ci. 35-22)

1. *Anāsthāpya* (where Āsthāpana is contraindicated)
2. *Abhukta Bhakta* (not taken meal)
3. *Nava Jwara* (acute fever)
4. *Pāṇḍu* (anaemia)
5. *Kāmāla* (jaundice)
6. *Prameha* (polyuria)
7. *Arśa* (piles)
8. *Pratiśyaya* (corrhyza)
9. *Arocaka* (anorexia)
10. *Mandāgni* (indigestion)
11. *Durbala* (weak)
12. *Plīhodara* (splenomegaly)
13. *Kaphodara* (Udara due to Kapha)
14. *Ūrustambha* (stiffness of thigh)
15. *Atisāra* (diarrhoea)
16. *Viṣapīta* (poisoning)
17. *Garapīta* (poisoning)
18. *Kaphaviṣyandi* (sticking to the channels of body)
19. *Gurukoṣṭha* (heavy bowel)
20. *Slīpada* (filariasis)
21. *Galagaṇḍa* (goitre)
22. *Apaci* (cervical adenitis)
23. *Kṛmikoṣṭhī* (helminthiasis)
24. *Kuṣṭha* (skin disease)
25. *Sthoulya* (obesity)
26. *Pīnasa* (chronic corrhyza)
27. *Kṛśa* (emaciated).

PROCEDURE OF BASTIKARMA[115]

The following factors need consideration in reference to *Basti karma* similar to any other procedure (CS. Si. 3-6).

1. *Doṣa* (humors)
2. *Auṣadhi* (drugs)

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114. उदरी च प्रमेही च कुष्ठी स्थूलश्च मानवः।
अवश्यं स्थापनीयास्ते नानुवास्याः कथञ्चन॥ (SS. Ci. 35/22)

115. समीक्ष्यदोषौषधदेशकालसात्म्याग्निसत्त्वादिवयोबलानि। (CS. Si. 3/6)

3. *Deśa* (climate)
4. *Kāla* (season)
5. *Sātmya* (adaptability)
6. *Agni* (digestive capacity)
7. *Satwa* (psychic state)
8. *Oka* (adaptations)
9. *Vaya* (age)
10. *Bala* (strength).

I. DOṢAS : As mentioned earlier Basti is the specific therapy for *Vāta Doṣa*, though it is also helpful in the management of disorders of *Pitta* and *Kapha Doṣas*. The following types of *Bastis* are indicated in relation to specific *Doṣic* disorders.

i. In *Doṣa Kṣaya* : Bṛmhaṇa, Balya, Varṇya and Utkleśaṇa Basti.

ii. In *Doṣa Vṛddhi* : Doṣahara, Śodhana and Tīkṣṇa Basti.

iii. In *Rasagata Doṣa* : Laṅghana and Pācana Cikitsā.

iv. In *Raktagata Doṣa* : Śamana, Varṇya, Balya and Rakta Basti.

v. In *Maṃsagata Doṣa* : Agni and Kṣāra Karma are of greater importance, but Lekhana and Vṛṃhaṇa Bastis are also used.

vi. In *Medogata Doṣa* : Lekhana and Karṣaṇa Basti.

vii. In *Asthigata Doṣa* : Saghṛta and Kṣira Basti.

viii. In *Majjāgata Doṣa* : Śamana and Bṛṃhaṇa Basti.

ix. In *Śukragata Doṣa* : Bājikaraṇa Basti.

x. In *Prāṇāvṛtta Samāna Vāyu* (Jaḍatwa, Gadgadatwa, Mūkatwa) Catuḥsneha and Yāpanā Basti (CS. Ci. 28-205).

xi. In *Udānāvṛtta Apāna Vāyu* : Basti and Anulomana (CS. Ci. 28-210).

xii. In *Āma Doṣa* : Basti is contraindicated (CS. Si. 8-23).

xiii. In *Āmavāta* and *Ūrustambha* : Basti generally does not succeed.

Besides the above consideration the following schedule of *Rasānusara* administration[116] of different *Bastis* in conditions with specific *Doṣic* predominance should be followed (CS. Si. 1-25).

S.No.	Doṣa	Rasa	Specifc Basti used	No. of Bastis
1.	*Vāta Pradhāna*	*Madhura, Amla, Lavaṇa*	*Sneha Basti*	9 to10
2.	*Pitta Pradhāna*	*Madhura, Tikta, Kaṣāya*	*Siddha Basti*	5 to 7
3.	*Kapha Pradhāna*	*Kaṭu, Tikta, Kaṣāya*	*Saṇyukta Basti*	1 to 3

II. *AUṢADHIS (DRUGS) :* The consideration of drugs in therapy is again important. Among many factors the following 11 factors *(Ekādaśa Auṣadhi Doṣa)* as described by Suśruta (SS. Ci. 35-32) and Caraka (CS. Si. 3-21, 22) are of special significance.[117, 118]

1. *Āmatā* (unriped)
2. *Hīnatā* (under dose)
3. *Atimātrā* (high dose)
4. Determination of *Nirūha Mātrā* according to age
5. Ati-Śītatā which produces *Vāta Vṛddhi, Vibandha* and *Ādhmāna*
6. *Ati-Tīkṣṇa* causing *Dāha, Atisāra, Mūrcchā*

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116. एकं तथा त्रीन् कफजे विकारे पित्तात्मके पञ्च तु सप्त वाऽपि।
वाते नवैकादश वा पुनर्वा बस्तीनयुग्मान् कुशलो विदध्यात्॥ (CS. Si. 1/25)

117. शीतस्त्वतिस्तम्भकरो विदाहं मूर्च्छां च कुर्यादतिमात्रमुष्णः॥
स्निग्धोऽतिजाड्यं पवनं तु रूक्षस्तन्वल्पमात्रालवणस्त्वयोगम्।
करोति मात्राभ्यधिकोऽतियोगं क्षामं तु सान्द्रः सुचिरेण चैति॥
दाहातिसारौ लवणोऽति कुर्यात्तस्मात् सुयुक्तं सममेव दद्यात्।
(CS. Si. 3/21, 22)

118. आमता, हीनता, अतिमात्रता, अतिशीतता, अत्युष्णता, अतितीक्ष्णता, अतिमृदुता, अतिस्निग्धता, अतिरूक्षता, अतिसान्द्रता, अतिद्रवता इत्येकादश द्रव्यदोषाः;
(SS. Ci. 35/32)

7. *Ati-Mṛdu* causing *Bivandha, Ādhmāna*

8. *Ati-Snigdha* causing *Jāḍya*

9. *Ati-Rūkṣa* causing *Vāta Doṣa*

10. *Ati-Sāndra*

11. *Ati-Drawatā*

III. *DEŚA (CLIMATE) : Deśa* includes the consideration *of Bhūmi Deśa* (climate) as well as the *Āturadeśa* (patient's body constitution) as described below :

(A) *Bhūmi Deśa* — i. *Jāṅgala-Vāta Pradhāna*
ii. *Ānūpa-Kapha Pradhāna*
iii. *Sādhāraṇa-Sama*

(B) *Ātura Deśa*-If the patient is *Rūkṣa Śarīra* then first 2 or 3 *Anuvāsana Bastis* should be given after which the patient should be prepared for *Nirūha Basti* (SS. Ci. 37-44) by i. *Abhyaṅga*, ii. *Swedana*, iii. *Anuwāsana.*

IV. *KĀLA AND KĀLĀWADHI :* According to Hārīta, *Basti* should be given in *Kṛṣṇa Pakṣa* while according to *Jaigata, Basti* is indicated in *Śukla Pakṣa*. However, the sequence of *Basti* in *Pañca Karma* therapy should follow the following schedule.

Vamana
15 days
Virecana
7 days
9 days *Nirūhabasti*
Anuwāsana Basti

According to *Vāgbhaṭṭa* (AH. Sū. 19-83) *Virecana* should be followed by *Anuwāsana Basti* after 7 days which should be continued on alternate days upto 15th day and after that *Nirūha Basti* should be given.

V. *SĀTMYA*[119] *(ADAPTABILITY) : Nirūha Basti* should

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119. न तु भुक्तवतो देयमास्थापनमिति स्थितिः ॥
विसूचिकां वा जनयेच्छर्दिं वाऽपि सुदारुणाम् ।
कोपयेत् सर्वदोषान् वा तस्माद्दद्यादभोजिते ॥ (SS. Ci. 38/19, 20)

always be given on empty stomach when food is fully digested. Because *Nirūha Basti* given after meals on full stomach causes *Chardi* and *Visūcikā* (SS. Ci. 38-19, 20).

VI. *AGNI (DIGESTIVE CAPACITY) :* In *Mandāgni Puruṣa Nirūha Basti* is contraindicated.

VII. *SATWA (MIND) :* The type of Doṣage schedule of *Basti* should be determined in consideration with the *Pravara, Madhya* and *Awara Satwas.*

VIII. *OKA SĀTMYA :* This is to signify the consideration of adaptations developed by habit or repeated experiences.

IX. *VAYA (AGE) :* Age is the most important factor to be considered according to dose as well as the nature of *Basti* and the size of Basti Yantra.

X. *BALA (STRENGTH) : Bala* of the patients *(Sahaja, Yukti Kṛta, Kāla Kṛta)* should again be considered in reference to the selection and procedure of *Basti* Therapy.

PROCEDURE OF BASTI[120]

(AH. Sū. 19-25, 26; CS. Si. 3-20)

1. Patient's posture : Left lateral position with left lower extremity straight and right lower extremity flexed on knee and hip joint.

2. Oleation of Anus : *Jātyādi* or *Padmakādi taila* are applied locally in *Gudamārga* and in *Basti* also.

3. The patient is asked to take deep breath while the *Basti* and *Basti-Auṣadhi* are introduced.

4. Shivering of the hands be avoided as it may produce *Guda Kṣata* or anal injury.

5. Quicker insertion of *Basti* be avoided.

6. Too slow induction of *Basti* be also avoided.

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120. उच्छ्वास्य बस्तेर्वदने बद्धे हस्तमकम्पयन्।
पृष्ठवंशं प्रति ततो नातिद्रुतविलम्बितम्॥
नातिवेगं न वा मन्दं सकृदेव प्रपीडयेत्।
सावशेषं च कुर्वीत वायुः शेषे हि तिष्ठति॥ (AH. Su. 19/25, 26)

7. Opening of the *Basti-Netra* should be kept straight.

8. The total *Basti* drug should not be introduced in the *Pakwāśaya* in order to avoid entrance of *Vāyu* into the *Pakwāśaya* which may produce pain (AH. Sū. 19-26).

9. *Basti* tube should be immediately pulled out after introduction of the drugs.

10. Patient should remain lying in the same (left lateral) posture upto 1/2 minute after introduction of Basti.

11. After that the patient should take up *Utkaṭukāsana* to eliminate the *Mala Begas*.

BASTI PRATYĀGAMA KĀLA[121, 122] : Duration of elimination of *Basti* is known as *Pratyāgama Kāla* (SS. Ci. 38-5; AH. Sū. 19-47). The time of *Pratyāgama Kala* is one *Muhūrta* (48 minutes). If *Basti* does not come out within one *Muhūrta*, the patient may die or may get severe pain *(Vāgbhaṭṭa)*. If Basti is retained for more than a *Muhūrta* (48 minutes) the following complications occur :

(a) *Koṣṭha Ādhmāna*

(b) *Pakwāśaya Śūla*

(c) *Mūtra Śūla*

(d) *Vāta Pratilomana*

(e) Pressing pain in cardiac region

(f) Others according to Suśruta (SS. Ci. 35-18).

i. *Vāta-Pratilomana*

ii. *Viṣṭambha*

iii. *Śūla*

iv. *Jwara*

v. *Arati*

vi. Death

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121. निरूहप्रत्यागमनकालस्तु मुहूर्तो भवति॥ (SS. Ci. 38/5)

122. आगतौ परमः कालो मुहूर्तो मृत्यवे परम्॥ (AH. Su. 19/47)

FEATURES OF SAMYAK[123] (ADEQUATE) BASTI

(CS. Si. 1-41; SS. Ci. 37-10) :

1. *Prasriṣṭa Viṭkatā*
2. *Prasriṣṭa Mūtratā*
3. *Prasriṣṭa Vātatā*
4. *Mala, Pitta, Kapha, Vāta Visarjana Yathākrameṇa*
5. *Lāghawa*
6. *Ruci*
7. *Agni Tikṣṇatā*
8. *Rogopaśamana*
9. *Prakṛtisthatā*
10. *Bala Vardhana.*

FEATURES OF ASAMYAK[124, 125] (INADEQUATE) BASTI

(CS. Si. 1-41. SS. Ci. 38-8) :

1. *Rujā* (Pain)
2. *Śotha* (Oedema)
3. *Pratiśyāya* (Cold)
4. *Kartikā* (Griping)
5. *Hṛllāsa* (Salivation)
6. *Vātasaṅga* (Flatulance)
7. *Mūtra saṅga* (retention of urine)
8. Śwāsa kṛcchratā (Dyspnoea)
9. *Aruci* (Anorexia)
10. *Vegālpatā* (Less elimination)
11. *Jāḍyatā* (Stiffness)

FEATURES OF EXCESS BASTI (ATIYOGA)

1. *Aṅgasupti* (Dullness in the body)
2. *Aṅgamarda* (Bodyache)
3. *Klama* (Tiredness)
4. *Nidrā* (Sleep)
5. *Kaṁpa* (Twitching)
6. *Dourbalya* (Weakness)
7. *Tamaḥ Praveśa,* (Drowsiness)
8. *Unmāda* (Psychosis)
9. *Hikkā* (Hiccough).

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123. प्रसृष्टविण्मूत्रसमीरणत्वं रुच्यग्निवृद्ध्याशयलाघवानि ॥
रोगोपशान्तिः प्रकृतिस्थता च बलं च तत् स्यात् सुनिरूढलिङ्गम् । (CS. Si. 1/41)

124. स्यात् हृच्छिरोरुग् गुदवस्तिलिङ्गे शोफः प्रतिश्यायविकर्त्तिके च ॥
हृल्लासिका मारुतमूत्रसङ्गः श्वासो न सम्यक् च निरूहिते स्युः । (CS. Si. 1/42)

125. दुर्निरूढः स विज्ञेयो मूत्रार्त्यरुचिजाढ्यवान् । (SS. Ci. 38/8)

POST-BASTI REGIMEN

1. *PATHYA* : i. *Sukhoṣṇa Jala* (Warm water)

ii. Milk, *Yūṣa, Māṁsa Rasa* (CS. Si. 1-21) according to the *Doṣic* set-up *(Vāta, Pitta, Kapha)* and *Balānusāra* (Strength of the patient).

iii. Suśruta (SS. Ci. 38-12) describes the following schedule.

S. No.	Doṣa	Pathya
1.	*Vāta Doṣa*	*Māṃsa Rasa*
2.	*Pitta Doṣa*	*Dugdha*
3.	*Kapha Doṣa*	*Yūṣa*

iv. Vāgbhaṭṭa (AH. Sū. 19-51) emphasizes *Sukhoṣṇa Jala* as a post-*Basti Pathya.*

v. Diet[126, 127] should not be *Guru.* Light diet should be followed by *Anuvāsana Basti* in the evening (SS. Ci 38-11, 12, 13).

Following activities should be avoided after *Basti Karma*[128] (CS. Si. 1-54).

i. Avoid sitting posture for long duration

ii. Avoid standing posture for long duration

iii: Avoid excessive talking

iv. Avoid travelling

v. Avoid day sleeping

vi. Avoid coitus

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126. पित्तश्लेष्मानिलाविष्टं क्षीरयूषरसैः क्रमात्।
सर्वं वा जाङ्गलरसैर्भोजयेदविकारिभिः॥ (SS. Ci. 38/12)

127. त्रिभागहीनमर्धं वा हीनमात्रमथापि वा।
यथाग्निदोषं मात्रेयं भोजनस्य विधीयते॥ (SS. Ci. 38/13)

128. अत्यासनस्थानवचांसि यानं स्वप्नं दिवा मैथुनवेगरोधान्॥
शीतोपचारातपशोकरोषांस्त्यजेदकालाहितभोजनं च। (CS. Si. 54)

vii. Avoid *Begavidhāraṇa* (suppression of urges)

viii. Avoid *Śitopacāra* (exposure to cold)

ix. Avoid sunlight

x. Avoid *Śoka* (anxiety)

xi. Avoid *Krodha* (Anger)

xii. Avoid *Akāla Āhāra* (untimely meals)

xiii. Avoid *Ahita Āhāra* (incompatible diet)

BASTI VYĀPADA (COMPLICATIONS)

A. Complications due to *Basti Netra*

B. Complications due to *Basti Puṭaka*

C. Complications due to *Basti Dātā*

COMPLICATIONS DUE TO BASTI PUTAKA

Sl. No.	Basti	Complications
1.	*Viṣama Basti*	*Gati Vaiṣamya*
2.	*Māṁsala Basti*	*Visragandhatā*
3.	*Chidrayukta Basti*	*Vāhyataḥ Srāwa*
4.	*Sthūla Basti*	Pain
5.	*Jalavatī Basti*	*Drawa Srāwa*
6.	*Vātala Basti*	*Phenila Srāwa*
7.	*Atisnigdha Basti*	Pain
8.	*Atiklinna Basti*	Hardly catchable

COMPLICATIONS[129] DUE TO BASTI DĀTĀ

(CS. Si. 5-8)

1. *Savāta Basti Dāna* (Entrance of air through *Basti*)
2. *Druta Prāṇita* (Quickly Administered *Basti*)

129. सवातातिद्रुतोत्क्षिप्ततिर्यगुत्क्षिप्तकम्पिताः ।
अतिबाह्यगमन्दातिवेगदोषाः प्रणेतृतः ॥ (CS. Si. 5/8)

3. *Tiryaka Praṇidhāna* (Tilted administered *Basti*)

4. *Ullipta* (Repeatedly pushed *Basti Puṭaka* where *Vāta* goes inside and produces complications)

5. Sakampa *Basti Dāna* : Shivering administration of *Basti* produces *Śotha, Dāha,* etc.

6. *Atiprāṇita Basti :* Complication due to excessive entrance of *Basti* viz., pain, burning sensation.

7. *Ati Vāhya Dattā Basti* : Complication due to less entrance of *Basti.*

8. *Ati Manda Dattā Basti* : Too slowly given *Basti.*

9. *Ati Vega Dattā Basti* : Complications due to forcibly administered *Basti.*

ŚIROVIRECANA KARMA

Nasya or *Śirovirecana* is generally the last step in the *Pradhāna Karma* during *Panca Karma* therapy. As stated by Suśruta (SS. Ci. 40-21). *'Nasya'* is a term to be applied generally for medicines or medicated oils administered through the nasal passage. Aruṇadutta states *"Nāsāyāma Bhavam Nasyam".* According to Bhava Prakāśa also all drugs and measures that can be administered through the nasal passage are called *Nasya* : *"Nāsā Grāhyam Yadouṣadham tad Nasyam"* (Bh. Pr. Pū. Kh.). 'Nasya' also means 'beneficial to nose'.

The *Nasya Karma* is considered the best and the most specific procedure for diseases of the head or the Śira *"Ūrdhwa Jatru-Vikāreṣu Viśeṣaunasyamiṣyate"* (AH. Su, 20-1). Because as stated by Vāgbhaṭṭa (AH. Sū. 20-1) the nasal passage is considered as the portals of the head or the Śira-*'Nāsā hi Śiraso Dwāraṁ'* (AH. Sū. 20-1) and accordingly all drugs and measures introduced through the nose spread throughout the head and its constituent parts and may accordingly influence all the *Doṣas* and the diseases situated in these parts.

Śirovirecana, Śirovireka, and *Mūrdha Virecana* are the synonyms of *Nasya Karma,* though *Śirovirecana* has been used by Suśruta with a specific meaning to describe a particular variety of *Nasya Karma.* Caraka (CS. Sū. 1-85) has used the term, *"Nastaḥ Pracchardana"* for Nasya. Literally Pracchardana is a

synonym of *Vamana* or vomiting. Thus the term *'Nasya'* being used in relevance to terms, *Virecana (Śirovirecana)* and *Vamana (Pracchardana)* clearly appears to be a type of *Saṁśodhana* karma administered through the nasal passage. However, it comprises of a variety of procedures of course the central object of all those procedures is one and the same.

CLASSIFICATION OF NASYA[130]

I. According to Caraka (CS. Si. 9-89 to 92)

1. *Nāvana* : (a) *Snehana*
   (b) *Śodhana*
2. *Avapīḍa* : (a) *Śodhana*
   (b) *Stambhana*
3. *Dhmāpana*
4. *Dhūma Nasya* : (a) *Prāyogika*
   (b) *Virecanīya*
   (c) *Snehanīya*
5. Pratimarśa : (a) *Snehana*

N. B. (1) Pharmacologically these above mentioned 5 types of *Nasya* may be of the following three types :

i. *Recana* (Purificatory)
ii. *Tarpaṇa* (Nourishing)
iii. *Śamana* (Retraing)

(2) Caraka (CS. V. 8-154) describes 7 types of *Nasyas* on the basis of the usable parts of the *Nasya* drugs viz.,

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130. नावनं चावपीडश्च ध्मापनं धूम एव च।
प्रतिमर्शश्च विज्ञेयं नस्तःकर्म तु पञ्चधा॥
स्नेहनं शोधनं चैव द्विविधं नावनं स्मृतम्।
शोधनः स्तम्भनश्च स्यादवपीडो द्विधा मतः॥
चूर्णस्याध्मापनं तद्धि देहस्रोतोविशोधनम्।
विज्ञेयस्त्रिविधो धूमः प्रागुक्तः शमनादिकः॥
प्रतिमर्शो भवेत् स्नेहो निर्दोषं उभयार्थकृत्।
एवं तद्रेचनं कर्म तर्पणं शमनं त्रिधा॥ (CS. Si. 9/89-92)

i. *Phala Nasya*, ii. *Patra Nasya*, iii. *Mūla Nasya*, iv. *Kāṇḍa Nasya*, v. *Puṣpa Nasya*, vi. *Niryāsa Nasya* and vii. *Twaka Nasya.*

(3) All the above (item 2) mentioned drugs can be used for *Nasya* in the form of i. *Cūrṇa*, ii. *Kalka*, iii. *Swarasa*, iv. *Kṣīra*, v. *Kwātha*, vi. *Sāra*, vii. *Udaka*, viii. *Dhūma*, ix. *Māṃsa Rasa*, x. *Siddha taila*, xi. *Ghṛta*, xii. *Madya* etc.

II. According to Suśruta[131] (SS. Ci. 40-21)

(1) *Śirovirecana*
(2) *Snehana*

N.B. Both these above mentioned types of *Nasyas* are further subdivided into the following 5 types, viz.,

(i) *Nasya*
(ii) *Śirovirecana*
(iii) *Pratimarśa*
(iv) *Avapīḍa*
(v) *Pradhamana*

III. According to Vāgbhaṭṭa (AH. Sū. 20-2)

Pharmacologically[132] the *Nasyas* may be of the following three types as described by Vāgbhaṭṭa (AH. Sū. 20-2) :

(1) *Virecana Nasya*
(2) *Bṛṃhaṇa Nasya*
(3) *Śamana Nasya*

IV. According to *Kāśyapa* (Ka. Si. AS. 2, 40).

(1) *Bṛṃhaṇa Nasya*
(2) *Karṣaṇa Nasya*
(3) *Śodhana Nasya*
(4) *Pūraṇa Nasya*

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131. औषधमौषधसिद्धो वा स्नेहो नासिकाभ्यां दीयत इति नस्यम्। तद्द्विविधम्-शिरोविरेचनं, स्नेहनं च। तद्द्विविधमपि पञ्चधा। तद्यथा—नस्यं, शिरोविरेचनं, प्रतिमर्शो, अवपीडः, प्रधमनं च। तेषु नस्यं प्रधानं शिरोविरेचनं च, नस्यविकल्पः प्रतिमर्शः, शिरोविरेचनविकल्पोऽवपीडः प्रधमनं च, ततो नस्यशब्दः पञ्चधा नियमितः ॥ (SS. Ci. 40/21)

132. विरेचनं बृंहणं च शमनं च त्रिधाऽपि तत्। (AH. Su. 20/2)

V. According to Śāraṅgdhara (Sh. Uttar. 8-2, 11, 24).
- (1) *Recana Nasya (Karṣaṇa)*
  - (a) *Awapīḍa*
  - (b) *Pradhamana*
- (2) *Snehana Nasya (Bṛṃhaṇa)*
  - (a) *Marśa*
  - (b) *Pratimarśa*

VI. According to Bhoja (Ḍalhaṇa on SS. Ci. 40-23)
  - (a) *Prāyogika Nasya*
  - (b) *Snaihika Nasya*

VII. According to Bideha (Uttar. SS. Ci. 40-44).
  - (a) *Sajñā Prabodhaka Nasya*
  - (b) *Stambhana Nasya*

NĀVANA NASYA

Nāvana is one of the important and well applicable therapies of *Nasya Karma*. It can be mainly classified into *Snehana* and *Śodhana*. *'Nāvana'* is administered by instilling the drops of a medicated oil in the nose. *Nāvana* is generally a *Sneha Nasya* and is known as *Nasya* in general (SS. Ci, 40-22). The *Nāvana Nasya* is indicated[133] in following conditions (SS. Ci. 40-22).

1. *Vātaja Śiroroga*
2. *Dantapāta*
3. *Keśapāta*
4. *Smaśrupāta*
5. *Tībra karṇa śūla*
6. *Karṇakṣweda*
7. *Timira*
8. *Swedopaghāta*
9. *Nāsā Roga*
10. *Mukha Soṣa*
11. *Awabāhuka*
12. *Akālaja Vali*
13. *Akālaja Palita*
14. *Dāruṇa Prabodha*
15. *Vāta-Pittajā Mukha Roga*

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133. तत्र यः स्नेहनार्थं शून्यशिरसां ग्रीवास्कन्धोरसां च बलजननार्थं दृष्टिप्रसादजननार्थं वा स्नेहो विधीयते तस्मिन् वैशेषिको नस्यशब्दः। तत्तु देयं वाताभिभूते शिरसि दन्त-केशश्मश्रुप्रपातदारुणकर्णशूलकर्णक्ष्वेडतिमिरस्वरोपघातनासारोगास्यशोषावबाहु-काकालजवलीपलितप्रादुर्भावदारुणप्रबोधेषु वातपैत्तिकेषु मुखरोगेष्वन्येषु च वातपित्तहरद्रव्यसिद्धेन स्नेहेनेति॥ (SS. Ci. 40/22)

Nasya (Nāvana) should be administered according to the following time schedules[134] (SS. Ci. 40-24 and Ḍalhana).

(A)	i. In *Kaphaja Roga*	:	Fore-noon
	ii. In *Pittaja Roga*	:	Noon
	iii. In *Vātaja Roga*	:	After-noon

(B) In healthy persons *Nasya* should be given according to the following seasonal schedule :

i. *Śīta Kāla*	Noon
ii. *Śarad* and *Vasanta*	Morning
iii. *Grṣma Ṛtu*	Evening
iv. *Varṣa Ṛtu*	Only when sun is visible

(C) The following is the *Dosage*[135] schedule for *Nasya* (SS. Ci. 40-36).

i. *Uttama*	8 Vindu
ii. *Madhyama*	6 Vindu
iii. *Heena*	4 Vindu

AVAPĪḌA NASYA

Avapīḍa Nasya is the *Nasya* consisting of the extract (juice) of a drug administered through nasal passage. They are of two types :

(1) *Stambhana Nasya*

(2) *Śodhana Nasya*

Avapīḍa Nasya[136, 137] is indicated in the following conditions (SS. Ci. 40-44, 45 and Ḍalhaṇa) :

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134. तत्रैतद्द्विविधमप्यभुक्तवतोऽन्नकाले, पूर्वाह्णे श्लेष्मरोगिणां, मध्याह्ने पित्तरोगिणां, अपराह्णेवातरोगिणाम्॥ (SS. Ci. 40/24)

135. चत्वारो बिन्दवः षड् वा तथाऽष्टौ वा यथाबलम्।
शिरोविरेकस्नेहस्य प्रमाणमभिनिर्दिशेत्॥ (SS. Ci. 40/36)

136. अवपीडस्तु शिरोविरेचनवदभिष्यण्णसर्पदष्टविसंज्ञेभ्यो दद्याच्छिरोविरेचनद्रव्याणा-मन्यतममवपिष्यावपीड्य च, (SS. Ci. 40/44)

137. कृशदुर्बलभीरुणां सुकुमारस्य योषिताम्।
शृताः स्नेहाः शिरः शुद्ध्यै कल्कस्तेभ्यो यथा हितः॥ (SS. Ci. 40/45)

1. *Viṣābhighāta*
2. *Saṅyāsa*
3. *Mūrcchā*
4. *Moha*
5. *Apatantraka*
6. *Mada*
7. *Apasmāra*
8. *Śirobhedana*
9. *Krodha*
10. *Bhaya*
11. *Mānasa Roga*
12. *Citta Byākulāwasthā*
13. *Kṛśa Rogī*
14. *Bhīru*
15. *Sukumāra persons*
16. Strī
17. *Raktapitta*
18. And similar states.

DHMAPANA OR PRADHAMANA NASYA

Pradhamana is a specific *Śodhana Nasya*. In *Pradhamana Nasya*, *Cūrṇa* (powder of drugs) is administered (inhaled) by nasal passage with the help of a *Nāḍi yantra*. Its dose as described by *Videha* is one *Mucyuti* (a pinch). It is indicated in the following states[138] (SS, Ci. 40-46) :

1. Mental diseases
2. Poisoning
3. *Kṛmija Śiroroga*

DHŪMA NASYA

Dhūma Nasya is defined as medicated fume taken by nasal route and eliminated by the oral route.

If *Dhūma Nasya* taken by oral route is eliminated by the nasal route it is harmful for the eyes. *Dhūma Nasyas* are of the following types :

1. *Prāyogic*
2. *Snehana*
3. *Vairecanic*

Its indications are as follow[139] (CS. Sū. 5-45) :

1. *Śiro Roga* (Diseases of the head)

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138. चेतोविकारकृमिविषाभिपन्नानां चूर्णं प्रधमेत् ॥ (SS. Ci. 40/46)

139. धूमयोग्यः पिबेद् दोषे शिरोघ्राणाक्षिसंश्रये ॥ (CS. Su. 5/45)

2. *Nāsā Roga* (Diseases of Nose)
3. *Akṣi Roga* (Diseases of Eye).

MARŚA-PRATIMARŚA NASYA

Marśa and *Pratimarśa* both consist of introduction of oils through the nostrils. It is well tolerated and is a very much convenient procedure. *Pratimarśa* and *Marśa* are in principles the same but they have the following distinctions :

S.No.	Pratimarśa	Marśa
1.	Never produces *Doṣa*	May produce *Doṣa*
2.	Dose-2 drops morning and evening	Dose-10 drops-*Uttama-Mātrā,* 8 drops-*Madhyama Mātrā,* 4 drops-*Hīna Mātrā.*
3.	Indicated in all seasons *(Ṛtus)* and in all age groups	Needs consideration of *Ṛtus* and *Vaya* (seasons and age).
4.	Consists of less *Sneha Dravyas.*	Consists of excess *Sneha Dravya.*
5.	No complications	May produce complications
6.	Slow acting and less potent action	Quickly effective and highly potent action.

Pratimarśa[140] is indicated in the following conditions (SS. Ci. 40-50, 51).

1. *Talpothita Kāla*
2. *Prakṣālita Danta Kāla*
3. *Gṛhānnirgachata*
4. *Vyāyāmottara*
5. *Vyawāyottara*
6. *Adhwapariśrānta Kāla*
7. *Mala-Mūtra Visarjanottara*
8. *Kawala*
9. *Anjanānte*
10. *Bhojanottara*
11. *Vamanānte*
12. *Diwāswapnotthitena*
13. *Śayanakāla*
14. *Hasyante.*

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140. प्रतिमर्शश्चतुर्दशसु कालेषूपादेयः; तदया—तल्पोत्थितेन, प्रक्षालितदन्तेन, गृहान्निर्गच्छता, व्यायामव्यवायाध्वपरिश्रान्तेन, मूत्रोच्चरकवलाञ्जनान्ते भुक्तवता, छर्दितवता, दिवास्वप्नोत्थितेन, सायं चेति॥ (SS. Ci. 40/51)

NASYA DRUGS AND THEIR PHARMACODYNAMICS

A large number of drugs have been advocated for use in *Nasya Karma* (CS. Sū. 2-3 to 5; CS. V. 8-154; SS. Sū, 39-6; AH. Sū. 15-4). These drugs are listed below with their pharmacodynamic properties.

S. No. Drugs	Pharmacodynamics
I - Caraka (CS. Sū. 2-3, 4, 5; CS. Vimana 8-154) :	
1. *Apāmārga seed*	*Rūkṣa, Tīkṣṇa, Kaṭu, Uṣṇa, Śothahara, Vedanāsthāpana.*
2. *Pippalī*	*Śnigdha, Tīkṣṇa, Kaṭu, Anuṣṇā Śeeta.*
3. *Marica*	*Laghu, Uṣṇa, Tīkṣṇa, Kaṭu.*
4. *Śigru*	*Rūkṣa, Tīkṣṇa, Kaṭu, Uṣṇa, Kapha-Vātaghna.*
5. *Viḍaṅga*	*Rūkṣa, Tīkṣṇa, Uṣṇa, Kaṭu, Kṛmighna.*
6. *Sarṣapa*	*Tīkṣṇa, Uṣṇa, Kaṭu, Tikta, Kapha-Vātanāśaka.*
7. *Tumburu*	*Laghu, Rūkṣa, Tīkṣṇa.*
8. *Jīraka*	*Rūkṣa, Kaṭu, Uṣṇa.*
9. *Ajamodā*	*Laghu, Rūkṣa, Vedanāsthāpana.*
10. *Pīlu*	*Snigdha, Tīkṣṇa, Uṣṇa, Vedanāsthāpana.*
11. *Hareṇukā*	*Kaṭu, Tikta, Anuṣṇa.*
12. *Pṛthvīkā*	*Rūkṣa, Uṣṇa, Kaṭu, Śothahara, Vedanā - sthāpana.*
13. *Surasā*	*Rūkṣa, Kaṭu, Tikta, Jantughna.*
14. *Swetā*	*Kaṣāya, Kaṭu, Śīta.*
15. *Kuṭheraka*	*Rūkṣa, Kaṭu Tikta, Jantughna.*
16. *Fadīnjaka*	*Rūkṣa, Kaṭu, Tikta, Jantughna.*
17. *Śirīṣa*	*Rūkṣa, Tīkṣṇa, Kaṣāya, Śothahara, Vedanāsthāpana.*
18. *Laśuna*	*Uṣṇa, Kaṭu, Tīkṣṇa.*

19. *Haridrā*	*Rūkṣa, Uṣṇa, Tikta, Kaṭu, Kapha, Vātaghna.*
20. *Dāru Haridrā*	*Rūkṣa, Tikta, Kaṣāya, Uṣṇa, Śothaharā.*
21. *Souvarcala Lavaṇa*	*Sūkṣma, Snigdha, Uṣṇa.*
22. *Saindhawa Lavaṇa*	*Avidāhi, Sūkṣma, Uṣṇa.*
23. *Jyotiṣmatī*	*Tīkṣṇa, Sara, Kaṭu, Uṣṇa.*
24. *Śuṇṭhī*	*Snigdha, Tīkṣṇa, Uṣṇa, Kaṭu.*
25. *Gaṇḍīra*	-
26. *Śallakī extract*	*Rūkṣa, Tīkṣṇa, Madhura, Śīta, Vedanāsthāpana.*
27. *Tejovati*	*Laghu, Rūkṣa, Tīkṣṇa.*
28. *Iṅgudi*	*Snigdha, Uṣṇa, Jantughna.*
29. *Twak*	*Rūkṣa, Tīkṣṇa, Kaṭu, Tikta, Uṣṇa, Kaphavāta Śāmaka.*
30. *Vārtāki*	*Rūkṣa, Tīkṣṇa, Madhura, Śothahara.*
31. *Elā*	*Rūkṣa, Kaṭu, Madhura, Śīta, Durgandha Nāśaka.*
32. *Sumukha*	-
33. *Gaṇḍīraka*	-
34. *Kālmālaka*	-
35. *Parṇasa*	-
36. *Śṛṅga Vera*	-
37. *Mūlaka*	*Tīkṣṇa, Uṣṇa, Vedanāsthāpana.*
38. *Tarkāri*	-
39. *Arka*	*Laghu, Rūkṣa, Tīkṣṇa, Uṣṇa, Kaṭu.*
40. *Alarka (Sweta puṣpa extract)*	*Laghu, Rūkṣa, Tīkṣṇa, Kaṭu, Uṣṇa.*
41. *Kuṣṭha*	*Rūkṣa, Tikta, Kaṭu, Uṣṇa, Vedanāsthāpana.*
42. *Naga Danti*	*Snigdha, Tīkṣṇa, Uṣṇa.*

43. *Vacā*	*Laghu, Tīkṣṇa, Sara, Uṣṇa, Kapha-Vātaghna.*
44. *Bhāraṅgi*	*Laghu, Rūkṣa, Tīkṣṇa, Kaṭu, Uṣṇa.*
45. *Indrāyaṇa*	*Rūkṣa, Tīkṣṇa, Katu, Uṣṇa.*
46. *Awāk Puṣpī*	-
47. *Bṛscikālī*	-
48. *Brāhmī*	*Tikta, Kaṣāya, Śīta.*
49. *Ativiṣa, Mūla*	*Rūkṣa, Tikta, Uṣṇa, Krimighna.*
50. *Lodhra*	*Rūkṣa, Kaṣāya, Kaṭu, Śīta and Śothahara.*
51. *Madanaphala*	*Laghu, Rūkṣa, Madhura, Tikta, Uṣṇa, Śothahara.*
52. *Saptaparṇa*	*Tikta, Kaṣāya, Ropaṇa.*
53. *Nimba*	*Laghu, Tikta, Śīta, Jantughna, Vedanāsthāpana.*
54. *Devadāru*	*Snigdha, Tikta, Uṣṇa.*
55. *Agarū extract*	*Rūkṣa, Tīkṣṇa, Uṣṇa, Śothahara, Vedanāsthāpana.*
56. *Sarala extract*	*Laghu, Tīkṣṇa, Snigdha, Uṣṇa.*
57. *Hiṅgu extract*	*Snigdha, Tīkṣṇa, Uṣṇa, Kaphavāta Nāśaka.*
58. *Guḍūcī*	*Guru, Snigdha, Uṣṇa.*
59. *Bṛhatī*	*Laghu, Rūkṣa, Tīkṣṇa, Uṣṇa.*
60. *Kṣawaka*	*Tīkṣṇā, Uṣṇa, Vāta-kapha Nāśaka.*

II. Suśruta (SS. Sū. 39-6)

1. *Pippalī*	*Rasa-kaṭu; Vipāka-Madhura; Vīrya Anuṣṇaśīta, Guṇa-Laghu, Snigdha, Tīkṣṇa; Kapha-Vāta hara.*
2. *Viḍaṅga*	*Rasa-kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa, Kaṭu, Kapha-Vāta Śāmaka.*
3. *Apāmārga*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa,*

	Rūkṣa; Kapha-Vāta-Pitta Saṁśodhana.
4. *Śigrū*	*Rasa-Kaṭu, Kaṣāya; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Sara; Vāta Śāmaka.*
5. *Sarṣapa*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Tīkṣṇa, Rūkṣa, Snigdha; Kapha-Vāta Nāśaka.*
6. *Śirīṣa*	*Rasa-Kaṣāya, Tikta, Madhura; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa; Tridoṣaghna.*
7. *Marica*	*Rasa-Kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa, Vāta-pitta Śāmaka.*
8. *Karavīra*	*Rasa-kaṭu, Tikta; Vipāka-kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa; Kapha-Vāta Śāmaka.*
9. *Bimbī*	*Rasa-Tikta, Kaṣāya; Vipāka-kātu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa; Kapha-Pittahara.*
10. *Swetāparājitā*	-
11. *Kiṇihi*	-
12. *Vacā*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa, Sara; Medhya.*
13. *Jyotiṣmatī*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Tīkṣṇa, Snigdha, Sara, Vāta-kapha Śāmaka.*
14. *Karañja*	*Rasa-Kaṭu, Kaṣāya; Vipāka-Kaṭu;*

	Vīrya-Uṣṇa, Guṇa-Laghu, Tīkṣṇa, Kapha-Vāta Śāmaka, Kaṇḍughna.
15. *Arka*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa; Kapha-Vāta Śāmaka.*
16. *Alarka*	Same as mentioned for *Arka.*
17. *Laśuna*	*Rasa-Madhura, Lawaṇa, Kaṭū, Tikta, Kaṣāya; Vipāka-Kaṭu; Vīrya-Uṣṇa; Vāta Haraṇa.*
18. *Atiśa*	*Rasa-Tikta, Kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Tridoṣahara.*
19. *Śuṇṭhī*	*Rasa-Kaṭu; Vipāka-Madhura; Vīrya-Uṣṇa; Guṇa-Laghu, Snigdha, Guru, Rūkṣa; Kapha-Vātahara, Tṛptighna.*
20. *Tālīsapatra*	*Rasa-Tikta; Vipāka-Madhura; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa; Kapha-Vātahara, Kāsaghna.*
21. *Tamālapatra*	*Rasa-Kaṭu, Tikta, Madhura; Vipāka-Katu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa, Kapha-Vāta Śāmaka.*
22. *Sursā (Tulasī)*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa; Kapha-Vāta Śāmaka.*
23. *Arjaka*	
24. *Iṅgudī*	*Rasa-Tikta, Kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Snigdha; Kṛmighna.*
25. *Medhāśṛiṅgī*	*Rasa-Kaṣāya, Kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa,*

	Kapha-Vāta Śāmaka; Ikṣumehaghna.
26. *Mātuluṅgī (Bijourā)*	*Rasa-Madhura or Amla; Vipāka-Madhura or Amla; Vīrya-Anuṣṇa; Guṇa-Laghu, Snigdha, Tīkṣṇa; Tridoṣaghna.*
27. *Muraṅgī*	*Rasa-Kaṭu; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa; Sara, Vāta-kapha hara.*
28. *Pīlu*	*Rasa-Kaṭu, Tikta, Madhura; Vipāka-Kaṭu; Vīrya-Uṣṇa; Tridoṣahara.*
29. *Jātī (Camelī)*	*Rasa-Tikta, Kaṣāya; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Snigdha, Mṛdu, Tridoṣahara.*
30. *Śāla*	*Rasa-Kaṭu, Tikta, Kaṣāya, Madhura; Vipāka-Kaṭu; Vīrya-Śita (Bark), Uṣṇa (Rāla); Kapha-Pitta Śāmaka (Bark), Tridoṣahara (Rāla).*
31. *Tāḍa*	*Rasa-Madhura; Vipāka-Madhura; Vīrya-Śīta; Guṇa-Gurū, Snigdha; Vāta-pitta Śāmaka.*
32. *Madhūka*	*Rasa-Madhura, Kaṣāya; Vipāka-Madhura; Vīrya-Śīta; Guṇa-Guru, Snigdha, Vāta-Pittahara.*
33. *Lākṣā*	*Rasa-Kaṣāya; Vipāka-Kaṭu; Vīrya-Śita; Guṇa-Laghu, Snigdha, Kapha Pitta Śāmaka.*
34. *Hiṅgu*	*Rasa-kaṭu; Vipāka-kaṭu; Vīrya-Ūṣṇa; Guṇa-Laghu, Snigdha, Tīkṣṇa, Sara; Vātakapha hara.*

35. *Lavaṇa*	*Rasa-Lavaṇa; Vipaka-Madhura; Vīrya-Uṣṇa; Guṇa-Guru, Snigdha, Madhura; Vāta Śāmaka.*
36. *Madya*	*Rasa-Madhura; Vipaka-Madhura; Vīrya-Śīta; Guṇa-Guru; Snigdha; Vāta-pitta Śāmaka.*
37. *Gomaya*	-
38. *Gomūtra*	-

III. Vāgbhaṭṭa (Ah. Sū. 15-4) :

1. *Viḍaṅga*	*Rasa-Kaṭu; Vīpāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa, Kaṭu, Kapha-Vāta Śāmaka.*
2. *Apāmārga*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Tīkṣṇa; Rūkṣa; Kapha-Vāta-Pittahara.*
3. *Trikaṭu*	*Dīpana, Śwāsa-Kāsahara, Gulma, Meha, Pīnasa, Ślīpada hara.*
4. *Dāru Haridrā*	*Rasa-Kaṭu, Kaṣāya; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Kapha-pitta hara, Pittaśāmaka.*
5. *Rāka (Niryāsa)*	*Rasa-Kaṣāya, Madhura; Vipāka-Kaṭu; Vīrya-Uṣṇa;* Effect *Tridoṣa hara.*
6. *Śirasa*	-
7. *Śigru*	*Rasa-Kaṭu, Kṣāra; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa, Tīkṣṇa, Sara.*
8. *Bṛhatī*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Guṇa-Laghu, Rūkṣa; Tridoṣa Śāmaka.*

9. *Madhuka Sāra*	*Rasa-Madhura, Kaṣāya; Vipāka-Madhura; Virya-Śīta; Guṇa-Guru, Snigdha; Vāta-pitta Śāmaka.*
10. *Saindhawa*	*Rasa-Lawaṇa; Vipāka-Madhura; Vīrya-Śīta; Tridoṣa Śāmaka; Rocana; Dīpana, Arucihara, Śūla hara.*
11. *Rasouta (Dāruharidrā Ghanasattwa)*	*Rasa-Tikta, Kaṣāya; Vipāka-Kaṭu; Vīrya-Uṣṇa, Guṇa-Laghu, Rūkṣa; Tridoṣaghna.*
12. *Elā*	*Rasa-Kaṭu; Madhura; Vipāka-Madhura; Vīrya-Śīta; Tridoṣahara.*
13. *Bṛhat Elā*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Tridoṣa Śāmaka.*
14. *Hiṅgu Pattri*	*Rasa-Kaṭu, Tikta; Vipāka-Kaṭu; Vīrya-Uṣṇa; Kapha-Vāta Śāmaka.*

INDICATIONS[141] OF NASYA KARMA

(CS. Si. 2-22)

1. *Śirastambha* (stiff head)
2. *Manyāstambha* (stiff neck)
3. *Dantastambha* (stiff teeth)
4. *Hanustambha* (stiff jaw)
5. *Pīnasa* (chronic corrhyza)

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141. शेषास्त्वर्हाः, विशेषतस्तु शिरोदन्तमन्यास्तम्भगलहनुग्रहपीनसगलशुण्डिका-शालूकशुक्रतिमिरवर्त्मरोगव्यङ्गोपजिह्विकार्धावभेदकग्रीवास्कन्धांसास्यनासिकाकर्णाक्षिमूर्धकपालशिरोरोगार्दितापतन्त्रकापतानकगलगण्डदन्तशूलहर्षचालाक्षिराज्यर्बुद-स्वरभेदवाग्ग्रहगद्गदक्रथनादय ऊर्ध्वजत्रुगताश्च वातादिविकाराः परिपक्वाश्च; एतेषु शिरोविरेचनं प्रधानतममित्युक्तं, तद्ध्युत्तमाङ्गमनुप्रविश्य मज्जपेशीकाभिरासक्तं केवलं विकारकरं दोषमपकर्षति॥ (CS. Si. 2/22)

6. *Galaśuṇḍikā* (uvulitis)
7. *Galaśāluka* (tonsilitis)
8. *Śukragata Roga* (seminal disorders)
9. *Timira* (cataract)
10. *Vartma Roga* (diseases of eye lid)
11. *Byaṅga* (pigmentations of face)
12. *Upajihwikā* (uvulitis)
13. *Ardhāwabhedaka* (hemicrania)
14. *Greewā Roga* (diseases of neck)
15. *Skandha Roga* (disease of shoulder)
16. *Aṃśaśūla* (painful shoulders)
17. *Mukha Roga* (diseases of mouth)
18. *Karṇaśūla* (earache)
19. *Nāsāśūla* (painful nose)
20. *Akṣiśūla* (painful eyes)
21. *Śiraḥśūla* (headache)
22. *Ardita* (facial palsy)
23. *Apatantraka* (hysteria)
24. *Apatānaka* (tetanus)
25. Galagaṇḍa (goitre)
26. *Dantaśūla* (toothache)
27. *Danta harṣa*
28. *Rājī*
29. *Arbuda* (tumor)
30. *Swarabheda* (hoarseness of voice)
31. *Vākgraha* (aphonia)
32. *Gadgadatwa* (stammering)
33. *Krathana* (alteration of voice)

CONTRAINDICATIONS OF NASYA KARMA[142, 143, 144]

(CS. Si. 2-20; SS. Ci. 40-47; AH. Sū. 20-11 to 13)

1. *Bhukta-Bhakta* (after meals)
2. *Ajīrṇa* (indigestion)
3. *Pītasneha* (having drunk ghee)
4. *Pītamada* (having drunk alcohol)
5. *Pīta toya* (having drunk water)
6. *Snehādi Pātukāma* (desirous of drinking)
7. *Snata śīra* (having bath by head)
8. *Kṣudhārta* (hungry)
9. *Śramārta* (exhausted by labour)
10. *Matta* (intoxicated)
11. *Snātukāma* (desirous of bath)
12. *Mūrcchita* (fainted)
13. *Śastradandahatā*
14. *Byawāya Klānta* (exhausted by coitus)
15. *Vyāyāma Klānta* (exhausted with exercise)
16. *Pānaklānta* (excessively drunk)

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142. अशिरोविरेचनार्हास्तु अजीर्णिभुक्तपीतस्नेहमद्यतोयपातुकामाः स्नातुशिराः स्नातुकामः क्षुत्तृष्णाश्रमार्तमत्तमूर्च्छितशस्त्रदण्डहतव्यवायव्यायामपानक्लान्तनवज्वरशोकाभितप्त-विरिक्तानुवासितगर्भिणीनवप्रतिश्यायार्ताः, अनृतौ दुर्दिने चेति ॥ (CS. Si. 2/20)

143. नस्येन परिहर्तव्यो भुक्तवानपतर्पितोऽत्यर्थतरुणप्रतिश्यायी गर्भिणी पीतस्नेहोदक-मद्यद्रवोऽजीर्णी दत्तबस्तिः क्रुद्धो गरार्तस्तृषितः शोकाभिभूतः श्रान्तो बालो वृद्धो वेगावरोधितः शिरः स्नातुकामश्चेति, अनार्तवे चाभ्रे नस्यधूमौ परिहरेत् ॥ (SS. Ci. 40/47)

144. —योजयेन्न तु नावनम् ।
तोयमद्यगरस्नेहपीतानां पातुमिच्छताम् ॥
भुक्तभक्तशिरःस्नातस्नातुकामस्रुतासृजाम् ।
नवपीनसवेगार्तसूतिकाश्वासकासिनाम् ॥
शुद्धानां दत्तबस्तीनां तथाऽनार्तवदुर्दिने ।
अन्यत्रात्ययिकाद्व्याधेः— (AH. Su. 20/11-13)

17. *Nava Jwara* (acute fever)
18. *Śokaistapta* (grieved)
19. *Virikta* (having had purgation)
20. *Anuwāsita* (having had oleus enema)
21. *Garbhiṇī* (pregnant)
22. *Nava Pratiśyāya* (acute corrhyza)
23. *Apatarpita* (fasted)
24. *Pītadrava* (having drunk liquid)
25. *Tṛṣṇārta* (thirsty)
26. *Garārta* (poisoned)
27. *Kruddha* (angry)
28. Bāla (children)
29. *Bṛddha* (aged)
30. *Begāwarodhita* (suppression of natural urges)
31. *Rakta Srāvita* (having had haemorrhage)
32. *Sūtika* (puerperium)
33. *Śwāsa* (dyspnoea)
34. *Kāsa* (cough).

PROCEDURE OF ŚIROVIRECANA

Among the requirements of *Nasya Karma* an important one as suggested by Kasture (1970) is a special room *'Naśya Bhawana'* which should be free from direct blow of air and dust and should be appropriately lighted (SS. Ci. 40-25). Besides, the following articles should be collected.

1. *Nasya Āsana :*

i. For sitting purpose ii. For lying purpose.

2. *Nasya Auṣadhis :*

Drugs required for induction and management of *Śirovirecana* should be collected in the form of (i) *Kalka,* (ii) *Cūrṇa,* (iii) *Kwātha,* (iv) *Kṣīra,* (v) *Udaka,* (vi) *Sneha,* (vii) *Āsawa,* (viii) *Dhūma* etc. The following are the common drugs used for *Śīrovirecana Karma* as also suggested by Kasture (1970).

COMMONLY USED NASYA DRUGS

CŪRṆAS	*SNEHAS*
1. *Kaṭphal Cūrṇa*	1. *Aṇu Taila*
2. *Trikaṭu Cūrṇa*	2. *Ṣaḍvindu Taila*
3. *Kaṭu Tumbī Cūrṇa*	3. *Jātyādi Taila*
4. *Śwāsa Kuṭhāra*	4. *Padmakādi Taila*
5. *Vāta Bidhwaṇśa*	5. *Pañcaguṇa Taila*
6. *Pippalī Cūrṇa*	6. *Vacā*
7. *Marica Cūrṇa*	7. *Ghṛta*
8. *Viḍaṅga Cūrṇa*	8. *Ghanasāra Yoga*

3. *Nasya-Yantra*[145] :

A suitable *Nasya Yantra* may be devised according to the need depending upon the following outlines described in the text (CS. Sū. 5-49) for *Dhūma Nasya.*

S. No. Types of Nasya	Netra length in Aṅgula
1. *Tīkṣṇa* or *Virecana Nasya*	24 *Aṅgula*
2. *Snaihika Nasya*	32 *Aṅgula*
3. *Prāyogika* or *Śamana Nasya*	36 *Aṅgula*

According to Vāgbhaṭṭa, length of the *Netra* for *Śamana Nasya* in *Dhūmapāna* should be 40 *Aṅgula.* Yogendra Nath states that the length of *Nasya Netra* should be determined on the basis of individual *Ātura Bala* as per following schedule.

S. No.	Ātura Bala	Types of Nasya	Length of tube in Aṅgula
1.	*Uttama Bala*	*Śamana*	36 *Aṅgula*
2.	*Madhyama Bala*	*Śamana*	40 *Aṅgula*
3.	*Hina Bala*	*Śamana*	48 *Aṅgula*

145. चतुर्विंशतिकं नेत्रं स्वाङ्गुलीभिर्विरेचने ॥
द्वात्रिंशदङ्गुलं स्नेहे प्रयोगेऽध्यर्धमिष्यते ॥ (CS. Su. 5/49)

Besides, one needs efficient assistants, spitting pots, droppers, dressing materials and other minor accessories during *Nasya Karma*.

4. *Observation of Ātura-Vaya and Kāla :*

(i) *Ṛtu* : *Nasya* should be given in *Prāvṛta, Śarada* and *Vasanta Ṛtus.* Time schedules in different seasons should be as below :

S. No.	Ṛtus	Nasya given in
1.	*Grṣma Ṛtu*	Before noon
2.	*Śita Ṛtu*	Noon
3.	*Varṣa Ṛtu*	Day should be clear

(ii) *Age* : Nasya should not be given in persons below 7 years or after 80 years of age. Thus *Nasya* is indicated between 8 to 80 years of age. However, the following exceptions have also been admitted (SS. Ci. 40-53; AH. Sū. 20-32) : (i) *Pratimarśa* may be administered at any age between birth to death while (ii) Dhūma is indicated after 12 years of age.

5. *Snehapāna* should not be given immediately before *Nasya karma*. However, if *Snehapāna* is really essential, the following schedule should be followed.

1st day
2nd day } Minimal dose of *Sneha*
3rd day
4th day Take rest (No *Sneha*)
5th day Administer *Nasya*

6. *The*[146] *Procedure of Nasya Karma* for routine purpose is

146. अथ पुरुषाय शिरोविरेचनीयाय त्यक्तमूत्रपुरीषाय भुक्तवते व्यभ्रे काले दन्तकाष्ठधूमपानाभ्यां विशुद्धवक्त्रस्रोतसे पाणितापपरिस्विन्नमृदितगलकपोलललाट-प्रदेशाय वातातपरजोहीने वेश्मन्युत्तानशायिने प्रसारितकरचरणाय किञ्चित प्रविलम्बितशिरसे वस्त्राच्छादितनेत्राय वामहस्तप्रदेशिन्यग्रोन्नामितनासाग्राय विशुद्धस्रोतसि दक्षिणहस्तेन स्नेहमुष्णाम्बुना प्रतप्तं रजतसुवर्णताम्रमणिमृत्पात्र-शुष्कीनामन्यतमस्थं शुक्त्या पिचुना वा सुखोष्णं स्नेहमद्रुतमासिञ्चेदव्यवच्छिन्नधारं यथा नेत्रे न प्राप्नोति ॥ (SS. Ci. 40/25)

described hereunder in a simplified flow sheet broadly based on Suśruta's descriptions (SS. Ci. 40-25).

I. *Ātura Mal-Mūtrādi Vega Nivṛtta.*
II. Diet should be given.
III. After some time tooth brush.
IV. Adequate *Dhūmapāna* (for purification of nostrils throat-*srotasa*).
V. Patient should lie down on *Nasya Śaiyā.*
VI. Put oil (e.g. *Pañcaguṇa Taila, Kṣīra balā taila*) on scalp for Massage.
VII. *Mṛdu Snehana* on head. According to Ayurvedic texts *Swedana* should not be given on the head. But it is only done for elimination of *Doṣa* and liquification of *Doṣas.*
VIII. *Tāpa sweda* should be given in following region i.e. *Śira, Mukha, Nāsā, Manyā, Grīwā, Kaṇṭha.*
IX. After *Swedana* smooth massage be applied on following regions e.g. *Gala, Kapola* and *Lalāṭa Pradeśa.*
X. *Nasya* be administered (during *Nasya* the patient should close his one nostril and should inhale the drug through the other).

7. (a) Determination of Doṣage in *Nasya Karma*

(After Kasture, 1970) :

S. No.	Type of Nasya	Hraswa Mātrā	Madhyama Mātrā	Uttama Mātrā
1.	*Śamana Nasya*	16 drops (8/8)	32 drops (16/16) drops)	64 drops (32/32)
2.	*Śodhana Nasya*	8 drops (4/4)	12 drops (6/6)	16 drops (8/8)
3.	*Marśa Nasya*	6 drops	8 drops	10 drops
4.	*Pratimarśa*	2 drops	2 drops	2 drops
5.	*Kalka Nasya*	4drops	6 drops	8 drops

(b) The usual dose for *Cūrṇa Nasya (Pradhmana)* is one *Mucyuti* (2-4 *Ratti*).

(c) *Śāraṅgadhara* (Sha. Utt. 8-9, 10) describes the following Dosage schedule for *Nasya Karma*.

(i) *Tīkṣṇauṣadhi Mātrā :*

Cūrṇa = 1 *Śāṇa* (24 *Rattis*)
Drava = 8 *Vindu* (8 drops)

(ii) *Hiṅgu*-1 *Yava* (1/2 *Ratti*)

(iii) *Saindhawa*-1 *Māsā*, (6 *Ratti*)

(iv) *Dugdha* (Milk) 8 *Śāṇa* (64 drops)

(v) *Jala (Auṣadhi Siddha)* 3 *Tolas*

(vi) *Śarkarā* and other *Madhura* drugs 1 Tola.

(d) According to Suśruta[147] (SS. Ci. 4 0-42) *Nasya* should be given for 21 days or till the appearance of adequate effects. On the other hand according to Vāgbhaṭṭa[148] (AH. Sū. 20-16) *Nasya* should be given for 7 days.

8. *Instructions*[149, 150] *for the patient during Nasya :*

As described by Caraka (CS. Si. 9-104), Vāgbhatta (AH. Sū. 20-20, 22) and Suśruta (SS. Ci. 40-26, 27) the following instructions should be observed by a patient while undergoing *Nasya Karma*.

1. *Swedana* and *Mardana* on the *Śira, Gātra* and *Manyā*.
2. *Śira* (head) should not be excessively flexed or extended.

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147. एकविंशतिरात्रं वा यावद्वा साधु मन्यते ॥ (SS. Ci. 40/42)

148. —सप्ताहं च तदाचरेत् ॥ (AH. Su. 20/6)

149. स्नेहेऽवसिच्यमाने तु शिरो नैव प्रकम्पयेत् ।
न कुप्येन्न प्रभापेच्च न क्षणूयान्न हसेत्तथा ॥
एतैर्हि विहतः स्नेहो न सम्यक् प्रतिपद्यते ।
ततः कासप्रतिश्यायशिरोऽक्षिगदसंभव ॥ (SS. Ci. 40/26, 27)

150. ततो नस्तःकृते धूमं पिबेत् कफविनाशनम् ।
हितान्नभुङ्निवातोष्णसेवी स्यान्नियतेन्द्रियः ॥ (CS. Si. 9/106)

3. Patient should lie supine *(Uttāna)* for a time interval consumble for counting numbers upto 100.
4. Avoid speech *(Naprabhāṣet).*
5. Avoid anger *(Nakupyeta).*
6. Avoid laughing *(Nahaset).*
7. Avoid swallowing of *Nasya Auṣadhi.*
8. Eliminate *Kapha* by *Gaṇḍūṣa* and *Ṣṭhīvana* (Spitting).

9. *Post Nasya Regimen*[150, 151, 152, 153, 154]

(CS. Si. 9-106; 108; SS. Ci. 40-31).

1. *Dhūmapāna* (smoking).
2. *Kawálagraha* and *Gaṇḍūṣa Dhāraṇa*
3. Diet (i) Warm water *(sukhoṣṇa jala)*
   (ii) Light diet *(laghu āhāra)*
4. Following be avoided :
   (i) *Śītala Jala* (cold water)
   (ii) *Doṣa Prakopaka Āhāra* (abhiṣyandi)
   (iii) *Rajodhūma* (dust and fume)
   (iv) *Sneha* (oils and ghee)
   (v) *Ātapa* (sun and heat)
   (vi) *Madya* (alcohol)
   (vii) *Śira Snāna* (bath by head)

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151. विरिक्तशिरसं तूष्णं पाययित्वाऽम्बु भोजयेत्।
लघु त्रिष्वविरुद्धं च निवातस्थमतन्द्रितः ॥ (CS. Si. 9/108)

152. नस्यान्ते वाक्शतं तिष्ठेदुत्तानः— (AH. Su. 20/22)

153. धूमं पीत्वा कवोष्णाम्बुकवलान् कण्ठशुद्धये। (AH. Su. 20/22)

154. दत्ते च पुनरपि संस्वेद्य गलकपोलादीन् धूममासेवेत, भोजयेच्चैनमभिष्यन्दि, ततोऽस्याचारिकमादिशेत्, रजोधूमस्नेहातपमद्यद्रवपानशिरःस्नानातियानक्रोधादीनि च परिहरेत्॥ (SS. Ci. 40/31)

(viii) *Atiyāna* (travelling)

(ix) *Krodha* (anger)

(x) *Nidrā* (sleep).

10. *Features of Adequate Nasya*[155, 156] (SS. Ci. 44-33, 38).

1. *Lāghawa* (lightness in the body)
2. *Nidrā* (good sleep)
3. *Śira Laghutwa*. (lightness in the head)
4. *Srotasa Śuddhi* (cleansing of channels)
5. *Indriya Prasanna* (sensorial happiness)
6. *Mana Prasanna* (mental happiness)

11. *Features of Inadequate Nasya*[157, 158] (SS. Ci. 40-35, 39).

1. *Indriya Rūkṣatā* (Dryness of Senses)
2. *Apraśama Roga* (Non-relief)
3. *Kaṇḍu* (Itching)
4. *Aṅga gourawa* (Heaviness in body)
5. *Nāsā, Netra, Mukha Srāwa* (Hyper secretion)

12. *Features of Excessive Nasya*[159, 160] (SS. Ci. 40-40, 41, 34)

1. *Śiraḥśūla* (headache)
2. *Indriya Bibhrama* (confusion)
3. *Kapha Srāwa* (salivation)

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155. लाघवं शिरसो योगे सुखस्वप्नप्रबोधनम्।
विकारोपशमः शुद्धिरिन्द्रियाणां मनः सुखम्॥ (SS. Ci. 40/33)

156. लाघवं शिरसः शुद्धिः स्रोतसां व्याधिनिर्जयः।
चित्तेन्द्रियप्रसादश्च शिरसः शुद्धिलक्षणम्॥ (SS. Ci. 40/38)

157. अयोगे वातवैगुण्यमिन्द्रियाणां च रूक्षता।
रोगाशान्तिश्च तत्रैष्टं भूयो नस्यं प्रयोजयेत्॥ (SS. Ci. 40/35)

158. कण्डूपदेहौ गुरुता स्रोतसां कफसंस्रवः।
मूर्ध्नि हीनविशुद्धे तु लक्षणं परिकीर्तितम्॥ (SS. Ci. 40/39)

159. मस्तुलुङ्गागमो वातवृद्धिरिन्द्रियविभ्रमः।
शून्यता शिरसश्चापि मूर्ध्नि गाढविरेचिते॥ (SS. Ci. 40/40)

160. कफप्रसेकः शिरसो गुरुतेन्द्रियविभ्रमः।
लक्षणं मूर्ध्न्यतिस्निग्धे रूक्षं तत्रावचारयेत्॥ (SS. Ci. 40/34)

13. *Nasya Vyāpada*[161] (Complications) :

The complications of *Nasya Karma (Nasya Vyāpada)* are many and they occur due to (i) administration of *Nasya* when it is contraindicated and (ii) due to technical failure. These complications occur through following two modes :

(a) *Doṣotkleśa*[162] which can be managed by *Śodhana* and *Śamana Cikitsā* and (b) *Doṣa Kṣaya* which has to be managed by *Bṛmhaṇa Cikitsā* (SŚ. Ci. 40-49, 50). The following table summarises the features and methods of management[163, 164] of complications arising due to administration of *Nasya* in persons where it is not indicated.

(CS. Si. 9-111-115; AH. Sū. 20-21).

S.No.	Conditions where Nasya is contraindicated.	Manifestations caused by Nasya	Management
1.	Ajirṇa, Bhojana Bhakta, Toya-pīta, Durdin.	Kapha Roga, Śwāsa, Kāsa, Pīnasa Agnimāndya.	Kaphanāśaka, Uṣṇa and Tīkṣṇa drugs should be used, Trib-

161. नस्ये शिरोविरेके च व्यापदो द्विविधाः स्मृताः ।
दोषोत्क्लेशात् क्षयाच्चैव विज्ञेयास्ता यथाक्रमम् ॥ (SS. Ci. 40/49)

162. दोषोत्क्लेशनिमित्तास्तु जयेच्छमनशोधनैः ।
अथ क्षयनिमित्तासु यथास्वं बृंहणं हितम् ॥ (SS. Ci. 40/50)

163. अजीर्णे भोजने भुक्ते तोये पीतेऽथ दुर्दिने ।
प्रतिश्याये नवे स्नाते स्नेहपानेऽनुवासने ॥
नावनं स्नेहनं रोगान् करोति श्लैष्मिकान् बहून् ।
तत्र श्लेष्महरः सर्वस्तीक्ष्णोष्णादिर्विधिर्हितः ॥
क्षामे विरेचिते गर्भे व्यायामाभिहते तृषि ।
वातो रूक्षेण नस्येन क्रुद्धः स्वाञ्जनयेद्गदान् ॥
तत्र वातहरः सर्वो विधिः स्नेहनबृंहणः ।
स्वेदादिः, स्याद् घृतं क्षीरं गर्भिण्यास्तु विशेषतः ॥
ज्वरशोकातितप्तानां तिमिरं मद्यपस्य तु ।
रूक्षैः शीताञ्जनैर्लेपैः पुटपाकैश्च साधयेत् ॥ (CS. Si. 9/111-115)

164. मूर्च्छायां शीततोयेन सिञ्चेत्परिहरम् शिरः ॥ (AH. Su. 20/21)

		huwankīrti, Nāgaguti, Kastūri Bhairawa Rasa, Trikaṭu Cūrṇa, Daśamūlāriṣṭa etc. may be used.
2. Kṛśa Śarīra, Virikta, Ātura, Garbhiṇī, Vyā-yāma Klānta, Tṛṣṇā.	Vāta Roga like symptoms.	Vātanāśaka-Snehana, Bṛṃhaṇa treatment, Snehana, Swedana. In pregnancy-milk and ghee should be given.
3. Vātikaśūla, Aṅg-amarda,Mukha Śoṣa, Garbhast-ambha, Vikṛta Garbha.		Tāpa sweda, Aświaga-ndhādighṛta, Rāsāya-na Cūrṇa, Nawajiwan Cūrṇa, Śatāwarī Cūrṇa.
4. Jwara, Śokābhi-tapta, Madya Pāna.	Timira Roga	Rūkṣa, Śītala Añjana lepa, Pūṭapāka.
5. If the patient fa-ints at the time of Nasya even in cases where it is indicated.	Mūrcchā	Spray cold water.

14. *Advantages of Adequate*[165] *Nasya Karma (*SS. Ci. 40-54, 55; CS. Si. 5-57 to 62).

1. Prevention of eye disease
2. Prevention of ear disease
3. Prevention of nasal disease
4. Healthy hair

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165. नस्येन रोगाः शाम्यन्ति नराणामूर्ध्वजत्रुजाः ।
इन्द्रियाणां च वैमल्यं कुर्यादास्यं सुगन्धि च ॥
हनुदन्तशिरोग्रीवात्रिकबाहूरसां बलम् ।
वलीपलितखालित्यव्यङ्गानां चाप्यसंभवम् ॥ (SS. Ci. 40/54, 55)

5. Prevention of *Pīnasa, Ardhāwabhedaka, Śiraḥśūla, Ardita, Hanugraha.*

6. Provides strength to scalp (bone, joint, tendon nerves)

7. Provides happīness

8. Improves voice

9. Improves senses

10. Prevention of *Ūrdhwajatrugata* (head neck) *Roga*

11. Delayed aging

12. Pleasant oral smell

13. Gives strength to head, *Danta*, *Śira, Trika, Vāhu* and *Urasa.*

14. Prevention of *Vali, Palita, Khālitya* and *Byaṅga* etc.

RAKTAMOKṢAṆA

Raktamokṣaṇa (Synonyms-*Asravisruti; Śoṇita Mokṣaṇa, Rakta Nirharaṇa, Rakta Srāvaṇa, Rakta Haraṇa* etc.) is a controversial item in *Pañca Karma* therapy. Caraka and his followers do not include *Raktamokṣaṇa* in *Pañca Karma.* Inclusion of *Rakta Mokṣaṇa* in *Paṅca Karma* schedule has been principally considered by Suśruta (SS. Sū. 14) and it has a comprehensive basis. The other *Pañca Karma* measures are designed to eliminate vitiated *Doṣas* but *Rakta Mokṣaṇa* aims to eliminate vitiated *Rakta* as a therapeutic measure. Quite in conformity with this issue one finds a discussion in the literature about inclusion of *Rakta* among the *Doṣas*. This again has been mainly discussed by Suśruta, the pioneer in the surgical school of Ayurvedists, because *Rakta* or blood is more oftenly a subject of consideration in practice of surgery. However, it must be kept in mind that during *Rakta Mokṣaṇa, Doṣas* (specially *Pitta Doṣa)* are also eliminated because *Rakta* and *Pitta* are integrally associated with each other. Thus *Rakta Mokṣaṇa* is advocated as a measure of therapy for the purpose of *Swāsthya Rakṣaṇa* (preservation of health) and Roga *Anutpatti* (Prevention and cure of disease).

Rakta being the object of therapy in the present context, it may not be out of place to have a brief reference to the physiopathology of *Rakta.*

CLASSIFICATION[166] OF RAKTA MOKṢAṆA

(SS. Sū. 14-25; SS. Sū. 13-4)

I. *Śastra Visrāwaṇa* (Blood letting with metallic instruments)

(i) *Pracchāna* (incisions)

(ii) *Sirāvyadha* (venepuncture)

II. *Anuśastra Visrāvaṇa* (Blood letting without metallic instruments) :

(i) *Śṛṅga* (application of cow's horn for aspiration).

(ii) *Jaloukā* (application of leech).

(iii) *Alābu* (application of *Alābu* for cupping).

(iv) *Ghaṭi Yantra* (cupping by glass application).

FEATURES OF NORMAL RAKTA[167]

(SS. Sū. 14-9)

1. *Visratā* (haemic smell due to *Pṛthvī*)
2. *Drawatā* (liquid due to *Apa*)

*3. *Rāga* (redness due to *Teja*)

4. *Syandana* (mobility due to *Vāyu*)
5. *Laghutā* (lightness due to *Ākāśa*)

FUNCTIONS OF RAKTA

(SS. Sū. 14; CS. Sū. 24)

1. *Māṃsa Poṣaṇa* (nutrition)
2. *Varṇa Prasādana* (complexion and lusture)
3. *Dhātu Puṣṭī* (tissue nutrition)
4. *Bala* (strength)
5. *Āyuṣya* (longevity)
6. *Prāṇa Saṅyojana* (life)

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166. शस्त्रविस्रावणं द्विविधं प्रच्छानं शिराव्यधनं च ॥ (SS. Su. 14/25)

167. विस्रता द्रवता रागः स्पन्दनं लघुता तथा ।
भूम्यादीनां गुणा ह्येते दृश्यन्ते चात्र शोणिते ॥ (SS. Su. 14/9)

7. *Sparśa Jñāna* (tactile sensation)
8. *Indriya Jñāna* (special senses)
9. And other allied functions.

*N. B. Caraka (CS. Sū. 24-22) and Suśruta (SS. Sū. 14-18) both have vividly described the red colouration of blood giving very appropriate similies.

INDICATIONS OF RAKTA MOKṢAṆA[168, 169]

(CS. Sū. 24-11 to 16; AH. Sū. 27-2, 3; AH. 11-9)

1. *Kuṣṭha* (skin diseases)
2. *Visarpa* (erysipelas)
3. *Piḍakā* (boils and carbuncles)
4. *Raktapitta* (haemorrhagic diseases)
5. *Asrigdara* (uterine bleeding)
6. *Gudapāka* (anorectal inflammation)
7. *Meḍhrapāka* (penile inflammation)
8. *Mukhapāka* (stomatitis)
9. *Pleeha Doṣa* (splenomegaly)
10. *Gulma* (abdominal swellings)
11. *Vidradhi* (abscesses)
12. *Nīlikā* (blue pigmentation)

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168. ततः शोणितजा रोगाः प्रजायन्ते पृथग्विधाः।
मुखपाकोऽक्षिरागश्च पूतिघ्राणास्यगन्धिता॥
गुल्मोपकुशवीसर्परक्तपित्तप्रमीलकाः।
विद्रधी रक्तमेहश्च प्रदरो वातशोणितम्॥
वैवर्ण्यमग्निसादश्च पिपासागुरुगात्रता।
संतापश्चातिदौर्बल्यमरुचिः शिरसश्च रुक्॥
विदाहश्चान्नपानस्य तिक्ताम्लोद्गिरणं क्लमः।
क्रोधप्रचुरता बुद्धेः संमोहो लवणास्यता॥
स्वेदः शरीरदौर्गन्ध्यं मदः कम्पः स्वरक्षयः।
तन्द्रा निद्रातियोगश्च तमसश्चातिदर्शनम्॥
कण्ड्वरुःकोठपिडकाकुष्ठचर्मदलादयः।
विकाराः सर्व एवैते विज्ञेयाः शोणिताश्रयाः॥ (CS. Su. 24/11-16)

169. —कुरुते ततः॥ २॥
विसर्पविद्रधिप्लीहगुल्माग्निसदनज्वरान्।
मुखनेत्रशिरोरोगमदतृड्लवणास्यताः॥ ३॥
कुष्ठवातास्रपित्तास्रकट्वम्लोद्गिरणभ्रमान्। (AH. Su. 27/2, 3)

13. *Kāmalā* (jaundice)
14. *Byaṅga* (Pigmentations on the face)
15. *Piplava* (a variety of moles)
16. *Tilakālaka* (moles)
17. *Dadru* (ring worm)
18. *Carmadala* (a type of eczema)
19. *Świtra* (leucoderma, vitiligo)
20. *Pāmā* (scabies)
21. *Asramaṇḍala* (red patches)
22. *Akṣi Roga* (eye diseases)
23. *Pūti Āsyagandhatā* (foul smelling mouth)
24. *Upakusa* (gingivitis)
25. *Pramelaka* (anxiety-state)
26. *Raktameha* (haematuria)
27. *Vāta Rakta* (gout)
28. *Vaiwarṇa* (discolouration)
29. *Agnimāndya* (dyspepsia)
30. *Pipāsā* (thirst)
31. *Gurugātratā* (heaviness in body)
32. *Santāpa* (fever)
33. *Atidourbalya* (weakness)
34. *Aruci* (anorexia)
35. *Śiro Rujā* (headache)
36. *Annapāna Vidāha* (burning sensation after meals)
37. *Tiktodgāra* (bitter eructations)
38. *Amlodgāra* (acid eructations)
39. *Kaṭu Udgāra* (acrit eructations)
40. *Klama* (neurasthenia)
41. *Krodhādhikatā* (anger)
42. *Buddhi Sammoha* (confusion)
43. *Lawaṇāsyatā* (saltish taste in the mouth)
44. *Sweda* (sweating)
45. *Śarīra dourgandhya* (foul smelling body)
46. *Mada* (alcoholism)
47. *Kampa* (tremors)
48. *Swarakṣaya* (aphonia)
49. *Atinidrā* (excessive sleep)
50. *Atī tamodarśana* (drowsiness)
51. *Kaṇḍu* (itching)
52. *Koṭha* (allergy)
53. *Masaka* (a type of mole)
54. *Nyakṣa* (black pigment-ation)
55. *Indra Lupta* (alopecia)
56. *Arbuda* (tumor)
57. *Aṅga Marda* (bodyache)
58. *Upajihwikā* (uvulitis)
59. *Raktatwaka* (Redness of the skin)
60. *Rakta Netratā* (red eyes)
61. *Rakta Mūtratā* (haematuria)
62. *Bhrama* (confusion)
63. *Arśa* (piles)

CONTRAINDICATIONS[170] OF RAKTAMOKṢAṆA

(SS. Sū. 14-24) :

1. *Sarwāṅga Śopha* (Gen. anasarca).
2. *Kṣīṇa* (Cachexia)
3. *Pāṇḍu, Arśa, Udara Roga* and *Śoṣa* due to *Amla Bhojana.*
4. *Garbhiṇī* (Pregnancy)
5. And all those where *Sirāvyadha* (Venepuncture) is contraindicated (SS. Śa. 8-3).

PROCEDURE OF RAKTA MOKṢAṆA :

Raktamokṣaṇa needs the following considerations in selection of patient and in application of a particular method of *Raktāwasecana.*

1. *Doṣa Awasthānusāra*
2. *Rakta Awasthānusāra*
3. *Ātura Awasthānusāra*

Suśruta (SS. Sū. 13-4) describes the following schedule of the *Doṣa*-wise use of *Raktamokṣaṇa* and other specific indications.

1. *Śriṅga* : In *Vāta Duṣṭī*
2. *Jaloukā* : In *Pitta Duṣṭī*
3. *Alābu* : In *Kapha Duṣṭī*
4. *Sirā Vyadha* : In circulating *Doṣas* and Rakta Duṣṭī.
5. *Pracchāna* : i) In cases with skin elevations due to healed wounds.
   ii) As a *Pūrvakarma* (preliminary step) for other types of *Raktamokṣaṇa.*
6. *Ghaṭi Yantra* : In *Gulma Roga* and during surgery.

The specific indications of *Rakta Mokṣaṇa* in reference to

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170. अथाविश्राव्याः—सर्वाङ्गशोफः, क्षीणस्य चाम्लभोजननिमित्तः, पाण्डुरोग्यर्शसोदरिशोषिगर्भिणीनां श्वयथवः ॥ (SS. Su. 14/24)

(i) *Doṣāwasthā*, (ii) *Raktāwasthā*, and (iii) *Āturāwasthā* as mentioned above are further dilated below :

I. INDICATIONS[171] (DOṢA AWASTHĀNUSĀRA)

(SS. Sū. 13-4; CS. Ci. 21-69, 70).

S.No. Rakta Mokṣaṇa	Pharmacodynamics	Indications or contraindications
1. *Śriṅga*	*Uṣṇa, Madhura, Snigdha* i.e. anti-*vātic* properties.	i) Indicated in *Vāta Duṣṭi.* ii) Contraindicated in *Kapha Doṣa.*
2. *Jaloukā*	*Śīta, Madhura*	Indicated in *Pitta Doṣa.*
3. *Alābu*	*Kaṭu, Rukṣa, Tīkṣṇa*	Indicated in *Kapha Duṣṭi.*

According to Vāgbhaṭṭa (AH, Sū. 26-49) *Alābu* ancl *Ghaṭī Yantra* are contraindicated in *Pitta* and *Rakta Doṣa Dūṣita Rakta.* It is specifically used in *Kapha* and *Vāta Doṣa.* In *Vāta-pitta Dūṣita Rakta Śriṅga* is used.

II. INDICATIONS[172] (RAKTA AWASTHĀNUSĀRA)

(AH. Sū. 26-50, 51; SS. Sa. 8-25, 26).

(i) *Grathit Rakta* — *Jaloukā*

(ii) *Piṇḍita Rakta* — *Pracchāna*

(iii) *Sarwāṅga Vyāpta Rakta* — *Sirā Vyadha*

(iv) *Twaksthita Supta Rakta* — *Śriṅga*

(v) Other indications according to Ḍalhaṇa :

(a) Superficial *Rakta-Doṣa* — *Pracchāna*

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171. तत्र वातपित्तकफदुष्टशोणितं यथासंख्यं शृङ्गजलौ-
काऽलाबुभिरवसेचयेत्, स्निग्धशीतरूक्षत्वात्। (SS. Su. 13/4)

172. अवगाढे जलौका स्यात्प्रच्छन्नं पिण्डिते हितम्।
शिराऽङ्गव्यापके रक्ते शृङ्गालाबू त्वचि स्थिते॥ (SS. Sa. 8/26)

(b) Slightly deeper *Doṣa*	*Jaloukā*
(c) Deeply seated *Doṣas*	*Tumbī*
(d) *Atyanta Gambhira Doṣas*	*Śriṅga*
(e) *Sarwaṅga Rakta Doṣa*	*Sirā Vyadha*

III. INDICATIONS (ĀTURA AWASTHĀNUSĀRA)

S. No.	Yantra	Indicated
(A)	According to Ḍalhaṇa :	
1.	*Śriṅga* and *Alābū*	*Sukumāra* Persons
2.	*Jalaukā*	*Param Sukumāra* persons
(B)	According to Suśruta (SS. Sū. 13-3)	
1.	*Jalaukā*	*Rājā, Rājā Sadṛśa, Bāla, Bṛddha, Bhīru, Durbala, Strī, Paramasukumāra.*

JALAUKĀ (LEECH)

The *Jalaukās* are commonly known as *Joka* or leech. They are given the name *Jalaukā* because they are born in water, they derive their nutrition from water (SS. Sū. 13-9) :

The *Jalaukās* are of two types : 1. *Saviṣa* who are not used in *Cikitsā*, 2. *Nirviṣa* which are used in *Cikitsā*. The classification of *Jalaukās*, their uses etc. as described by Suśruta (SS. Sū. 13-9, 12) are given below[173] :

A. *Saviṣa Jalaukā*[174] (SS. Sū.13-10)

1. *Kṛṣṇā Jalaukā*
2. *Karbūrā Jalaukā*
3. *Alagardā Jalaukā*
4. *Indrāyudhā Jalaukā*
5. *Sāmudrikā Jalaukā*
6. *Gocandanā Jalaukā*

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173. ता द्वादश:; तासां सविषा: षट्, तावत्य एव निर्विषा: (SS. Su. 13/10)

These are not used in *Cikitsā*; and they are found more in *Varṣa Kāla.*

B. *Nirviṣa Jalaukā*[175] (SS. Sū. 13-10, 11, 12)

7. *Kapilā Jalaukā*
8. *Piṅgalā Jalaukā*
9. *Śaṅkhamukhī Jalaukā*
10. *Mūṣikā Jalaukā*
11. *Puṇḍarīka Jalaukā*
12. *Sāwarikā Jalaukā*

These are used in *Cikitsā*; they are found more in *Śarada* Kāla and they live in pure water.

INDICATIONS OF JALAUKĀ

(AH. Sū. 26-35)

i. *Gulma*
ii. *Arśa*
iii. *Vidradhi*
iv. *Kuṣṭha*
v. *Vāta-Rakta*
vi. *Kanṭha Roga*
vii. *Netra Roga*
viii. *Viṣa Duṣṭha*
ix. *Visarpa,* and
x. Others.

PURIFICATION OF JALAUKĀ[176]

(SS. Sū. 13-19)

As described by Suśruta (SS. Sū. 13-19) and Vāgbhaṭṭa (AH. Sū. 26-40) the following procedure may be adopted for purification of *Jalaukā :*

1. Take *Jalaukā*

2. Apply *Haridrā* and Sarṣapa-*Cūrṇa* on the body of the *Jalaukā*.

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174. तत्र सविषाः - कृष्णा, कर्बुरा, अलगर्दा,
इन्द्रायुधा, सामुद्रिका, गोचन्दना चेति। (SS. Su. 13/11)

175. अथ निर्विषाः - कपिला, पिङ्गला, शङ्कुमुखी,
मूषिका, पुण्डरीकमुखी, सावरिका चेति॥ (SS. Su. 13/12)

176. गृहीताश्चताः सर्षपरजनीकल्कोदकप्रदिग्धगात्रीः सलिलसरकमध्ये मुहूर्त्तस्थिता विगतक्लमा ज्ञात्वा ताभी रोगं ग्राहयेत्। (SS. Su. 13/19)

3. Put the *Jalaukā* in water for one *Muhūrta* :

The desire of *Jalaukā* to suck the blood increases.	Appetite and locomotion of the *Jalạukā* increases.

4. Again put it into *Kāñjī* or *Takra*

5. Put it into fresh water

6. Apply this *Jalaukā* for *Rakta Mokṣaṇa*. For this one should catch the *Jalaukā* after putting on gloves and he should apply the *Jalaukā* on the patient's skin.

OBSERVATIONS ABOUT JALAUKĀVACĀRAṆA

1. A gradual distension in the central portion of the *Jalaukā* is observed during *Rakta Mokṣaṇa.*

2. Itching and burning sensation at the site of *Jalaukā* bite indicates that *Jalaukā* is sucking pure blood.

3. Pulsation on *Jalaukā* may be visible.

REMOVAL OF JALAUKĀ FROM SKIN

Saindhawa Cūrṇa is sprinkled over the *Jalaukā* which makes it to immediately leave the skin. After removal of the *Jalaukā* two different attendants are required one for management of the patient and the other for the management of the leech itself.

SIRĀ VYADHA

Certain diseases are not cured by the *Śīta, Uṣṇa, Rūkṣa* and *Snigdha Cikitsā.* They should be considered *Raktaja Vyādhis* and they should be managed by *Sirā Vyadha.*

1. SIRĀ VYADHA KĀLA

1. *Varṣā Ṛtu*	In clean sky
2. *Grṣma Ṛtu*	In *Śīta Kāla*
3. *Śīta Ṛtu*	In *Uṣṇa Kāla*

N.B. : If *Sirā Vyadha* is absolutely essential, it may by done in any season (SS. Sū. 8-5).

2. FOLLOWING INSTRUMENTS ARE ESSENTIAL FOR SIRĀ VYADHA

1. *Kuṭhārikā Śastra* (AH. Sū. 26-12)
2. *Bṛhimukha Śastra* (AH. Sū. 26-11)
3. *Trikurca Śastra* (AH. Sū. 26-22)

3. The following diets are indicated :

1. Liquid diet
2. *Yavāgū*

INDICATIONS OF SIRĀ VYADHA (Vāgbhaṭṭa)

1. *Visarpa* (erysipelas)
2. *Vidradhi* (abscess)
3. *Plīhā Vṛddhi* (splenomegaly)
4. *Gulma* (abdominal swellings)
5. *Agni Māndya* (poor digestion)
6. *Jwara* (fever)
7. *Mukha Roga* (oral diseases)
8. *Netra Roga* (eye diseases)
9. *Meda* (obesity)
10. *Tṛṣṇā* (thirst)
11. *Lawaṇāsyatā* (salty taste of mouth)
12. *Kuṣṭha* (skin diseases)
13. *Vāta Rakta* (gouts)
14. *Rakta Pitta* (haemorrhagic diathesis)
15. *Kaṭu Amlodgāra* (acrit eructations).

CONTRAINDICATIONS OF SIRĀ VYADHA

(SS. Sa. 8-3).

1. *Bāla* (children)
2. *Vṛddha* (aged)
3. *Rūkṣa* (Excessive dryness)
4. *Kṣata-Kṣīṇa* (chest injury)
5. *Bhīrū* (frightened)
6. *Pariśrānta* (tired)
7. *Madya Pāna* (alcoholic)
8. *Strikarṣita* (exhausted due to coitus)
9. *Vamana* (vomited)
10. *Virecana* (purged)
11. *Anuwāsita Vasti* (enemated)
12. *Āsthāpita Vasti* (enemated)
13. *Rātri Jāgaraṇa* (night arousal)
14. *Klaibya* (impotency)

15. *Kṛśa* (cachexic)
16. *Garbhiṇī* (pregnant)
17. *Kāsa* (cough)
18. *Śwāsa* (asthma)
19. *Śoṣa* (emaciation)
20. *Tībra Jwara* (hyperpyrexia)
21. *Ākṣepaka* (convulsions)
22. *Pakṣāghāta* (paralysis)
23. *Upawāsa* (fasting)
24. *Mūrccha* (fainting)
25. *Pipāsā* (thirst)

FEATURES OF ADEQUATE[177] SIRĀ VYADHA

(SS. Sū. 14-32, 33)

1. *Lāghawa* (lightness of the body)
2. *Vedanā Śānti* (decrease in pain)
3. *Vyādhirbega Praśamana* (remission of symptoms)
4. *Prasād Mana* (happiness)

FEATURES OF INADEQUATE[178] SIRĀ VYADHA

(SS. Sū. 14-29)

1. *Śopha* (swelling)
2. *Dāha* (burning sensation)
3. *Pāka* (inflammation)
4. *Vedanā* (pain)
5. *Kaṇḍū* (itching)
6. *Lālimā* (redness)

FEATURES OF EXCESSIVE[179] SIRĀ VYADHA

(SS. Sū. 14-30).

1. *Śirobhitāpa* (headache)
2. *Āndhya* (loss of vision)
3. *Adhimantha* (glaucoma)
4. *Timira* (Cataract)

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177. सम्यग्गत्वा यदा रक्तं स्वयमेवावतिष्ठते।
शुद्धं तदा विजानीयात् सम्यग्विस्रावितं च तत्॥
लाघवं वेदनाशान्तिर्व्याधेर्वेगपरिक्षयः।
सम्यग्विस्राविते लिङ्गं प्रसादो मनसस्तथा॥ (SS. Su. 14/32, 33)

178. तद् दुष्टं शोणितमनिर्ह्रियमाणं
शोफदाहरागपाकवेदना जनयेत्॥ (SS. Su. 14/29)

179. तदतिप्रवृत्तं शिरोऽभितापमान्ध्यमधिमन्थतिमिरप्रादुर्भावं
धातुक्षयमाक्षेपकं दाहं पक्षाघातमेकाङ्गविकारं हिक्कां
श्वासकासौ पाण्डुरोगं मरणं चापादयति॥ (SS. Su. 14/30)

5. *Dhātu Kṣaya* (emaciation)
6. *Ākṣepaka* (convulsions)
7. *Pakṣāghāta* (paralysis)
8. *Ekāṅga Roga* (monoplegia)
9. *Tṛṣṇā* (thirst)
10. *Dāha* (burning sensation)
11. *Hikkā* (hiccough)
12. *Śwāsa* (asthma)
13. *Kāsa* (cough)
14. *Pāṇḍu* (anaemia)
15. *Maraṇa* (death)

PROCEDURE OF QUICK STOPPAGE OF BLOOD FLOW

(SS. Sū. 14-39, 45)

1. *Sandhāna* (*sandhāna dravya* application)
2. *Skandana* (by *Śita dravya*)
3. *Pācana* (*bhasma* and *kṣāra*)
4. *Dahana* (cauterization)

POST-RAKTA MOKṢAṆA REGIMEN[180, 181]

(CS. Sū. 24-23; SS. Sū. 14, 38)

1. Avoid excess *śita* (cold) and *Uṣṇa* (heat)
2. Consume *laghu* and *Agnideepana Āhāra*
3. Avoid *Krodha* (anger)
4. Avoid *Maithuna* (coitus)
5. Avoid *Diwāswapana* (day sleeping)
6. Avoid *Asātmya Āhāra* (incompatible diet)
7. Consume *Rakta Vardhaka* diets
8. Conserve digestive fire *(Agni)*
9. And take other appropriate measures

PRACCHĀNA

It is a type of *Rakta-mokṣaṇa*. It is applied over the elevated portions of the skin (locally), where few superficial incisions

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180. नात्युष्णशीतं लघु दीपनीयं रक्तेऽपनीते हितमन्नपानम्।
तदा शरीरं ह्यनवस्थितासृगग्निर्विशेषेण च रक्षितव्यः॥ (CS. Su. 24/23)

181. तं नातिशीतैर्लघुभिः स्निग्धैः शोणितवर्धनैः।
ईषदम्लैरनम्लैर्वा भोजनैः समुपाचरेत्॥ (SS. Su. 14/38)

should be done and the part proximal to the incision should be tied. The incision should not be made on *Marmasthalas, Snāyus, Sandhis* and *Asthis,* (AH. Sū. 26-51). *Pracchāna* is *a Lekhana Karma.* And in fact *Pracchāna* has to be a part of all kinds of *Rakta Mokṣaṇa* procedures i. e. *Śriṅga, Alābu* and *Jalaukā* before these are applied.

ŚRIṄGA

It is a type of *Rakta-Mokṣaṇa*, in which a suitable cowhorn is utilised for *Raktāwasecana. Śringa* is *Uṣṇa, Madhura* and *Snigdha.* Therefore, it is specifically used in *Vātic* disorders. According to *Ḍalhaṇa, Śriṅga* (horn) should be rounded and 7 *Angula* in length.

ALĀBU

Alābu is another method of *Raktamokṣaṇa* which sucks blood on the principles of cupping. It is said that *Alābu* can suck blood from a distance of 12 *Aṅgula* from the skin. However, *Alābu* in its uses may be as follows :

(A) 1. *Dīrghālābu* (elongated)
    2. *Bṛttālābu* (rounded)

(B) 1. *Madhura Rasayukta Alābu*
       (a) Used as a vegetable
       (b) Used in *Pitta Vāta Doṣa*
    2. *Tikta Rasayukta Alābu*
       (a) Used for *Vamana*
       (b) Used for *Kapha Duṣṭa Rakta Mokṣaṇa.*

PHARMACODYNAMIC DIFFERENCES BETWEEN MADHURA AND KAṬU ALĀBU

Madhura Alābu	*Kaṭu Alābu*
Guru, Sara, Snigdha	*Laghu, Rūkṣa*
Vāta-pitta Śamaka	*Tīkṣṇa, Kapha-pitta*
Virya-Śita	*Saṁśodhana*
Rasa-Madhura	*Vīrya-Śita*
Vipāka-Madhura	*Rasa-Kaṭu, Tikta*
	Vipāka-Kaṭu

GHAṬĪ YANTRA

Caraka describes the *Ghaṭī Yantra* in *Gulma Prakaraṇa* (CS. Ci. 5-137, 139)

Ghaṭī Yantra is a small cup in which vacuum is created with negative pressure which sucks blood towards the surface after which it is incised for blood letting. Prior to application of *Ghati Yantra* the patient has to be prepared (*Pūrva Karma-Snehana Swedana*) as usual (AS. Ci. 16).

THE VAHIḤ PARIMĀRJANA THERAPIES OF ĀYURVEDA

The classical Āyurvedic therapeutics is classified in the following manner :

A. *Naiṣṭhikī Cikitsā*

B. *Laukikī Cikitsā*

1. *Daiva Vyapāsraya Cikitsā*
2. *Yukti Vyapāsraya Cikitsā*
   - i. *Antaḥ Parimārjana*
   - ii. *Vahiḥ Parimārjana*
   - iii. *Śastra Praṇidhāna*
3. *Sattvāvajaya*

As mentioned earlier the *Antaḥ Parimārjana Cikitsā* deals with the internal purificatory measures popularly described as classical *Pañca Karma* viz., *Vamana, Virecana, Anuvāsana, Āsthāpana, Śirovirecana* and *Raktamokṣaṇa*. These *Karmas* have been dealt in detail elsewhere in this monograph. The object of such processes is to cleanse the body from inside by radical methods eliminating the vitiated *Doṣas and* Malas. They constitute the main stream of *Saṁśodhana Cikitsā* of Āyurveda.

The *Vahiḥ Parimārjana* processes are advocated to clean the body from outsides. Although no consolidated account of such practices are available in texts, there are a large number of practices like *Snehana, Swedana. Abhyaṅga, Seka, Lepa, Avagāhana, Señcana, Mardana, Utsādana, Dhūpana, Gandhana,* etc. described sporadically. As a matter of fact the *Vahiḥ Parimārjana* procedures are essentially Physiotherapy of Āyurveda. Classical *Pañca Karma* is not Physiotherapy. The *Pañca Karmas* are basically physiological methods cleansing the body internally.

However, the Keralīya *Pañca Karma* procedures appear to have been developped on the basis of classical *Vahiḥ Parimārjana Cikitsā*. And as such the entire Keraliya *Pañca Karma* is a form of Physiotherapy.

The *Vahiḥ Parimārjana* methods of Āyurveda and traditional Keralīya practices form really an unique system of Physiotherapy which not only aims at physical correction and rehabilitation, but also aim at imparting local medication and trans-skin nourishment of the tissues. The essential components of Āyurvedic Physiotherapy are (1) Local application of medicines, (2) Local application of Nutrients, (3) Application of heat, (4) Massage. Combining all the above four components these treatments afford a comprehensive effect on the individual and lead to the improvement in functions, correction of deformities and nourishment and strength to the part treated.

Besides the above physiotherapeutic attributes these practices might also be causing mild to moderate degree of cleansing effect *(Śodhana)* too through the skin. Application of medicaments, heat and massage definitely helps in eliminating a number of abnoxious elements trans skin. The application of heat in different forms of *Swedana* promotes local circulation and metabolic activities and also opens the pores of the skin to permit transfer of medicaments and nutrients towards needed sites and elimination of vitiated *Doṣas* and *Malas* through skin and perspiration.

Thus the *Vahiḥ Parimārjana Cikitsā* of Āyurveda is a comprehensive form of physiotherapy which affords multiple attribute. This idea will be more clear when the traditional Keralīya *Pañca Karma* will be discussed elsewhere in this monograph.

KERALĪYA PAÑCAKARMA

The classical Āyurvediya *Pañcakarma* therapy consists of Five fold purificatory measures namely *Vamana, Virecana, Anuvāsana, Āsthāpana* and *Śirovirecana*. The Suśruta school also includes *Rakta mokṣaṇa*. *Snehana* and *Swedana* are the main *Pūrva Karmas* or preparatory measures. In spite of being of fundamental importance in Āyurvedic therapeutics, the classical *Pañca Karma* therapy has ceased to be in practice in present times, however some sporadic attempts are being made to revive the same. On the other hand a simplified form of *Pañca Karma* therapy has continuted to be in practices by a sound tradition in Kerala. These practices, which are very much different than classical *Pañca Karma,* are popularly known as *Keraliya Pañca Karma*. This is by the commendable efforts of the vaidyas of Kerala and the compilations made by senior scholars of Ayurveda in Kerala, that such a comprehensive system of purificatory cum physiotherapeutic method of treatment could survive and is flourishing even today. *Keraliya Pañca Karma* can be considered as the *contemporary Pañcakarma therapy*. As a matter of fact this kind of *Pañca Karma* essentially appears to have been built upon the simpler techniques of classical Āyurvedic approach. The Five major components of Keraliya *Pañcakarma* are as mentioned below :

1. *Dhārā Krama*
2. *Kāya Seka*
3. *Piṇḍa Sweda*
4. *Anna Lepa*
5. *Śiro Lepa*

In *Dhārā Krama* liquid medicaments like medicated oils, milk, ghee, *Takra* or *Kwātha* etc. placed in *a Dhārā* pot hanged on an appropriate height are allowed to trickle slowly through *Dhārā Vartikā* on the forehead of the patient lying below on *a Droṇī*. In this procedure the *Dhārā Dravya* is selected in consideration of the nature of illness and the constitution and strength of the patient. This procedure has been found to be very effective in patients of mental diseases, and diseases of eye, ear, nose and throat. It has also been found good for diseases like facial palsy, *Vātavyādhi,* insomnia, loss of memory etc.

In *Kāya Seka* or *Sarvāṅga Señcana,* the medicated liquid materials such as oil etc. are poured all over the body of the

patient from *Dhārā Krama*. The material is poured from a particular height and a simultaneous massage is also done. This procedure provides strength to the tissues and promotes biological fire. The lusture and beauty of the body is enriched, *ojas* is stabilised, the sense organs become clear and overall longevity is achieved. This procedure helps regeneration and rejuvenation in the body and is specially good in the management of *Vātika* diseases.

Piṇḍa Sweda is the most important among all the five procedures. Here a bolus of *Pāyasam* made up of new coarse rise *(Ṣaṣṭika Śāli)* cooked in milk and *Balā Kaṣāya* (Balā decoction or any other appropriate drug decoction) is used for fomentation/massage on the body. Prior to the actual *Piṇḍa Sweda* procedure it is an essential pre-requisite to do adequate *Snehana* by applying oil all over the body; following which the body is fomented with luke warm *Pāyas* bolus encapsulated in a piece of cloth. After few rounds of fomentation with closed bolus, the entire body is systematically massaged by rubbing the warm *Pāyasam* all over by opening the cloth. The entire process may end with warm water bath and rest in controlled temperature. A successfully employed *Piṇḍa Sweda* is believed to help to a great extent the patients suffering from different neuromuscular disorders and also several systemic diseases.

In *Anna lepa,* specially processed and medicated *Anna* (cereals) is used for applying on the body. At some occasions when *Piṇḍa Sweda* does not work, *Anna Lepa* is applied with adequate benefit.

Similarly *Śiro Lepa* is indicated specially in cases of mental and brain disorders where one applies the paste of traditionally known drugs over the head of the patient.

In Keralīya *Pañca Karma* the selection of drugs for preparing *Dhārā, Lepa* or *Piṇḍa* etc. is done in consideration of the nature of the disease to be treated. Thus the so used drugs are, as a matter of fact, specific *Śāmaka* (Palliative) remedies for the respective ailments. Accordingly these drugs also produce similar effect when administered internally. Drugs are selected and are formulated in consideration of the nature of the particular disease, constitution and strength of the patient. It is expected that in addition to the palliation *(Śamana)* of the disease and underlying *Doṣika* vitiation, the *Keralīya Pañca Karma*

procedures also help in elimination *(Śodhana)* of *Doṣas* located in the skin and peripheral circulation *(Twak gata)*. *Swedan* component of the procedure eliminates *Doṣas* through perspiration while *Dhārā* and *Lepa* procedures eliminate vitiated *Doṣas* through the medium of the medicated liquids viz., *Taila, Ghṛta, Takra,* Milk etc. used in the process. But hopefully the depth of *Śodhana* (elimination) is limited only upto *Twak* i.e. skin and peripheral circulation.

These procedures render the *Srotāṁsi* i. e. channels of the body, free from stagnation making the sticky contents mobile and directing them in appropriate direction. This automatically leads to elimination/excretion of *Doṣas* even without applying classical *Śodhana* or purificatory measures. It may be pointed out that in classical *Āyurvedīya Pañca Karma* too the *Pūrva Karmas* like *Snehana-Swedana* are applied with a similar objective of mobilising the excretable *Doṣas*. Āyurveda has described three *Roga Mārgas*. Among these logically this type of treatment is more useful in *Śākhāgata vyādhis* or *Vāhya Roga Mārga gata Vyādhis.*

In connection with the appropriate time and season for administering *Pañca Karma* treatment it is stated that such a treatment may be given in consideration of the need of the patient any time preferably when it is not too hot or too cold and when there are no clouds in the sky. But the Keralīya *Vaidyas* advocate that *Pañca Karma* may be practised in *Varṣā Ṛtu* i.e. rainy season specially because this is the *Prakopa Kāla* of *Vāta*. This is the period when intervention is needed.

In the actual therapy, for one week prior to the *Pañca Karma* the patient is kept under observation. During this time he is subjected to *Samyaka Koṣṭha Śuddhi, Samyaka Śoṣaṇa* and *Samyaka Pācana* in addition to necessary assurance to the patient to prepare him mentally and physically fit to undergo the actual *Pañca Karma* procedure. This is *Pūrva Karma* or preparatory practice. In *Paścāta Karma* it is advocated to provide boiled or medicated luke warm water for bath and *Siddhajala* prepared by *Ṣaḍaṅga Pānīya Vidhi* or *Dhānya jala* for drinking. In diet he should be given medicated, light and easily digestible food. The patient should avoid such activities which may cause mental and physical exertion and tiredness. He should observe *Brahmacarya*, should uphold *Dhāraṇīya Vegas* and eliminate

Adhāraṇīya Vegas. Day sleep and night arousal should be avoided. He should also avoid riding on horses or elephants. Vāgbhaṭṭa gives similar instructions to a *Vyādhi Kṣīṇa Puruṣa* i.e., a person who has become weak due to sickness (A. H. Sū 6).

COMPARISION OF CLASSICAL ĀYURVEDĪYA PAÑCA KARMA & KERALĪYA PAÑCA KARMA

The important similarities and dissimilarities between the classical and Keralīya *Pañca Karma* are as described below :

1. Classical Āyurvedīya *Pañca Karma* is essentially a *Saṃśodhana* (Purificatory) procedure while Keralīya *Pañca Karma* is essentially a *Saṁśamana* (palliation) procedure.

2. In classical *Pañca Karma* except *Anuvāsana Vasti* all procedures cause *Laṅghan* while all practices of Keraliya *Pañca Karma* cause *Brimhaṇa.*

3. The classical *Pañca Karma* expels out the vitiated *Doṣas* located in *Koṣṭha* while the Keralīya practices deal with the *Doṣas* lying in *Śākhā, Marma, Asthi, Sandhi.*

4. In classical Āyurvedic *Pañca Karma Snehana* and *Swedana* (oleation and sudation) are used as *Pūrva Karma* or preparatory measures while in Keralīya *Pañca Karma Snehana-Swedana* form the essential component of *Pradhāna Karma.*

5. In classical *Pañca Karma* the *Auṣadhi Kalpas i.e.* medicaments are described to be of fixed number of formulations. In Keraliya *Pañca Karma* medicaments are prepared readily in individual consideration of the patient and the disease.

6. The classical *Pañca Karma* is indicated as a method of prevention of seasonal diseases by adopting *Śodhana* during *Ṛtu Kāla* and this is also designed to prepare a patient for *Rasāyana* therapy. In *Keralīya Pañca Karma* no such indication is emphasized.

7. In classical Āyurvedīya *Pañca Karma* the medicaments are administered internally and the *Doṣas* are expelled from *Ābhyantara Mārga* out through external body orifices. In contrast in Keralīya *Pañca Karma* the medicaments are essentially directed from exterior to interior inorder to effect *Śamana* or palliation. However, some *Doṣas* are eliminated through perspiration.

8. In classical *Pañca Karma* therapy, the procedures are used in specific consideration of the three *Doṣas* viz., *Vamana* in *Kapha* predominent diseases, *Virecana* in *Pitta* predominent ones and *Vasti* in *Vāta* predominent states. In contrast, *Keralīya Pañca Karma* procedures are designed in consideration of diseases (not *Doṣas)* for example *Siro Dhārā* in mental diseases, *Piṇḍa Sweda* in joint diseases etc. Thus Āyurvediya *Pañca Karma is* essentially *Doṣa Pratyanika* while *Keralīya Pañca Karma* is *Vyādhi Pratyānika.*

9. In classical *Pañca Karma* it is pre-requisite to administer *Snehana* and *Swedana* as *Pūrva Karma* or preparatory procedure while in Keralīya *Pañca Karma*, one uses *Dīpana, Pācana, Laghu Āhāra* and *Koṣṭha Śuddhi* as *Pūrva Karma.* Thus in this respect the two schools of *Pañca Karma* therapy are quite different, rather contradictory in approach.

10. In classical *Āyurvedīya Pañca Karma* there are vivid descriptions about the *Samyaka Yoga, Atiyoga* and *Hīna Yoga* of each therapy which are followed in the practice. In *Keralīya Pañca Karma* no such statements have been made. Here the therapist uses his own experience to administer a procedure to the benefit of a patient.

11. In classical *Pañca Karma* therapy the *Pradhāna, Madhya* and *Hīna* degree of *Śodhana* or purification is determined on the basis of the number of *Vega* or bouts, amount of expelled *Doṣa/Mala* and the dose of the *Śodhana* drugs administered. In Keralīya *Pañca Karma* each *Karma* / procedure is designed for each patient deciding the time duration of each therapy and number of days of treatment.

12. In classical *Pañca Karma* therapy there are only Five fixed *Pradhāna Karmas,* but in Keralīya *Pañca Karma* this number is not fixed. More than five procedures have been described. It is called *Pañca Karma* only in a symbolic sense.

THE DHĀRĀ KARMA

Dhārā Karma is useful in patients suffering from diseases of head and diseases like psychosis, epilepsy, neurosis, insomnia, fainting, confusion, *klama,* excessive perspiration, alcoholism, coma etc. This procedure is also known as *Mūrdha seka, Śirodhārā* and *Śiraḥ Seka.* This procedure is practised as

Mūrdha Dhārā (head bath), *Sarvāṅga Dhārā* (whole body bath) or *Ekāṅga Dhārā* (local bath) etc. The ancients have also mentioned the specific use of such procedures in mental diseases.

For *Dhārā Karma* one uses *Āmalakī Kwātha* or other suitable medicated decoctions, medicated milk, goat milk, *Dhāroṣṇa* milk, luke warm milk, and drugs like *Balā, Mustaka, Khasa, Candana, Madhu-yaṣṭī, Jaṭāmaṃsī* etc. according to the nature of the disease to be treated. In *Pīttaja* diseases the drugs of choice are *Uśīra, Candana,* coconut water. In *Kaphaja* diseases the drug of choice is *Madhuyaṣṭī* and *Nāgar Mustaka.* And in *Vātika* diseases *Balā taila* and *Dasamūla* are specially indicated. According to the drug component the *Dhārā Karma* is known by different names viz.,

1. *Takra Dhārā*
2. *Kṣīra Dhārā*
3. *Kṣīra Dhārā* with human milk
4. *Taila Dhārā*
5. *Kwātha (Auṣadhi) Dhārā*

THE EQUIPMENTS

1. ***Droṇī Vidhānam***-A wooden *Droṇi* is an essential equipment for *Dhārā Krama* and several other procedures in Keraliya *Pañca Karma.* It should be 6 feet long, 2 feet wide and 4 1/2-9 inches deep. It should be made of *Khadira, Śāla* or *Bela* wood or similar other *Vātaghna* tree woods. It can also be made of *Deodāru* or *Sāgwāna* wood. The wood should be strong and stiff. On all four corners the *Droṇī* should be provided with handles to be used for lifting the *Droṇī* whenever required. The *Droṇī* should be 1 1/2 feet high from floor, it should be even and smooth. Towards the head end, the *Droṇī* should be provided with a head seat of about 1 1/2 feet for resting the head outside the *Droṇī.* This head seat is made smooth and is made shallow deep to comfortably accommodate the back of the head. On the foot end of the *Droṇī* on both corners there should be holes to drain out the used liquid medicaments. These holes may be fitted with suitable funnels and tubes to properly collect the materials.

The *Droṇī* is so devised that the patient has no difficulty in

lying down in six different postures to undergo the therapy and the therapists and massagers have no difficulty in massaging or treating the patient and the medicaments may countinue to collect simultaneously without any loss. The *Droṇī* is made of wood specially the wood which may be strong and smooth and may possess *Vyādhihara* property.

2. ***Śarāwa***-*Śarāwa* is needed for *Seka Karma*. It should be, of one *Āḍhaka* or 2 litres capacity made up of clay or some suitable metal. It should be smooth and should have wide mouth. The borders of the mouth should have been folded outwards so that the neck of the *Śarāwa* may be tied with a rope for handling. The *Śarāwa* should be wider towards the mouth than the bottom. The bottom end should be narrow. It should be 5-6" deep. The *Śarāwa Pātra* is also made of glass, gold, silver, copper, clay or wood.

In the centre of the bottom of the *Śarāwa* there should be a hole equal to the size of the central part of little finger. A halved ripe coconut shell with a hole in the bottom is placed inverted in the bottom of the *Śarāwa* in such a way that the hole of the coconut shell coincides with the hole in the bottom of the *Śarāwa*. A rod of 2-3 *Aṅgula* length is placed obliquely over the hole of the coconut shell. A well prepared thread *Varti* is tied with rod and the other end of the *Varti* is passed through the holc of coconut shell and further through the hole in the bottom of the *Śarāwa* to hang below. This *Vartī* is of 6 *Aṅgula* length and is pointed downwards. When under use this *Varti* is wet with the *Dhārā Drava* which easily trickles down slowly.

The neck of the *Śarāwa* is tied with strong rope and is hanged from a hook above in such a way and such a height that the *Varti* of the *Dhārā* is only 2-3 *Aṅgula* above the head of the patient lying below to undergo the therapy. The height is kept so small that the liquid trickling from the *Varti* over the head of the patient does not become cold before touching the head. If the *Dhārā* is too high the material will get cold while flowing to the head, more over if the material is poured from height it may cause injury to the head or discomfort. Moreover if it is too low it will be difficult to watch and to regulate the speed of *Dhārā*. Hence it is important to keep the *Dhārā* on a suitably fixed height. The size of the *Varti* and the hole of the *Dhārā* may need to be increased or

decreased in consideration of the thinness or thickness of the liquid to be used for *Dhārā,* because a thin fluid flows more rapidly than a thick fluid. Hence inorder to control the speed it is necessary to take this fact into account while designing the Śarāwa and *Dhārā* assembly.

OTHER REQUIREMENTS - Before undertaking the procedure it is necessary to procure *Deepaka,* cloth pieces, pots, *Mūrdha Taila* (head oil), *Kāya Taila* (body oil), water for bath, banana leaf, pillow, furnitures, drugs like *Āmalakī, Sugandhā Bālā, Khasa, Candana, Daśamūla, Balā, Srīphala, Kuṭakī* etc.

THE DHĀRĀ DRAVA - The Dhārā Drava is prepared in different ways for different indications. Although in Kerala *Dhārā Drava* is ordinarily known as *Takra Dhārā* but usually *Mūrdha Seka* is not done with *Takra* alone. The *Takra* is specially processed for this purpose. In case of *Kaphaja* diseases the *Drava* is processed with *Kaphahara* drugs like, *Nāgara Mustaka* and *Madhuyaṣṭi;* for *Pittaja* diseases *Uśīra, Candana* and *Sugandha Bālā* are used.

THE FORMULATION OF TAKRA DHĀRĀ - 8 *Tolas* of the selected medicating drug is heated on mild fire with 4 litres of water and one litre of cow milk till the quantity remains only equal to the original quantity of milk i.e. 1.0 kg. Now it is allowed to cool and then is converted into curd by adding *jaman.* Next morning this curd is churned vigorously to prepare *Takra* without adding any water and butter is removed. Now to this 1 kg medicated *Takra* equal amount of *Āmalakī Kaṣāya* is added. Thus *Takradhārā Dravya* is ready for use. Besides above mentioned method, ordinarily now a days the following simplified method of *Takra Dhārā* preparation is more commonly used.

40 *Tolas* of *Āmalakī* crushed and boiled with 9 *Prastha* clean water till the quantity remains only 1½ *Prastha.* Now this *Āmalakī Kaṣāya* is filtered and is added with 1½ *Prastha* of good butter free *Takra* prepared from good cow milk curd which had been jammed in one night and had not become sour. This *Kwātha Takra* mixture is used for *Dhārā.* The amount of ready *Dhārā Drava* should not be less than 1 kg or more than 2 kg.

Formulation of Kṣīra Dhārā-Ordinarily *Balāmūla* and *Śatāvarī* one *Pala* each are boiled slowly in 2 *Prastha* cow milk

plus 8 *Prastha* clean water till the quantity remains only 2 *Prastha*. Now it is allowed to cool and is filtered. When its temperature becomes bearable to skin, it is used in *Dhārā*. If there is an urgency to use the material quickly, one may add equal amount of coconut water to make it rapidly cool and more efficacious. There are several methods of preparing *Kṣīradhāra*. Different physicians prepare different kinds of *Kṣīra* based on their own experience and logic. Some physicians prefer preparing it by *Kṣīra pāka* method by several other drugs. Some times *Dhāroṣṇa milk* (fresh warm milk directly from breast) is used.

In *Kṣīra Dhārā* too the volume of *Dhārā* liquid is kept 1-2 kgs. *Ksīra Dhārā* is used in cases of psychosis, epilepsy, insomnia, headache, burning sensation over head etc. The suitably medicated *Ksīra Dhārā* is also used in the management of *Śoṣa* and consumption.

Strī-Stanya Yukta Kṣīra Dhārā : ½-2 Prastha of human breast milk added with a little camphor power, is used quickly and immediately, because such a milk starts getting fermented when kept on. It is used in cold conditions only. This is indicated in acute conditions like enteric fever and hyperpyrexia as cooling device by adding ice in *Strī Kṣīra Dhārā* in place of ordinary ice cold compress.

Taila Dhārā-16 *Palas Balā Mūla* is crushed and boiled with 16 *Prastha* water added with 4 *Tola Balā Mūla Kalka* and one *Prastha Taila*. This is further boiled after adding one *Prastha* cow milk. The material so prepared is used for *Taila Dhārā* in appropriate indications.

THE ŚIRO DHĀRĀ PROCEDURE

A clean *Droṇī* is placed in a clean appropriately ventilated room. Necessary materials and accessories are procured and are placed in the therapy room systematically. Over the head of the *Droṇī a Śarāwa Pātra* is hanged from a suitable height. On side of the head end an auspicious lamp is established. The records and case tickets etc. are also placed behind the head end of the *Droṇī*. On an auspicious day and on *Śubha Muhūrta* in the morning the physician after finishing his daily routine and with an established mind should call the patient, should light the lamp

and after *Swasti Vācana* and *Maṅgalācaraṇa,* should make the patient to sit in the *Droṇī* keeping face towards east. Then he should irrigate the head of the patient with oil thrice carefully. Following this, the attendants should massage the body below the neck with luke warm oil. The shoulders and the back and other parts should be massaged appropriately. Then a thick cloth *Varti* be tied arround the head above the eye brows. This should neither be very tight nor very loose. To avoid the *Dhārā Dravya* trickling in the eyes of the patient, it is advisable to tie the cloth strip along with pieces of banana leaves. The hairs of the patient should be cut small as far as possible and should be well combed. A small pillow is prepared by wrapping cloth pieces in banana leaf. This should be kept on head seat and the patient should now lie down in *Droṇī* keeping the head on the pillow. At first instant the patient should lie down on back i.e. supine. On the right of the patient the physician should sit on some height. He should catch the *Dhārāpātra* hanging over the head of the patient and should put his thumb over the hole of the Dhārāpātra keeping closed while asking the attendants to transfer the whole prepared *Dhārā Dravya* into the *Dhārā pātra* carefully. Now the physician should slowly release the outlet of *Dhārā* through its *Varti.* The *Dhārā Dravya* in the *Śarāva* should be intermittently shaken so that the liquid trickles slowly and constantly over the head of the patient. Simultaneously the head and the limbs of the patient should be given intermittent massage so that the patient does not become overflooded with the *Dhārā Dravya* or may not even remain dry. The *Dhārā Dravya* which might have flown out in the *Droṇī* or even outside should be collected time to time during the process and be replaced in *Dhārā pātra* after making it luke warm.

For *Seka Kriyā* the maximum time duration is 1½ hours. First day it should be done for one hour and from second day the duration should be increased by 5 minutes daily till seventh day; thus the duration becomes about 1½ hours on 7th or 8th day after which the time is reduced by 5 minutes every day upto l4th day, thus reaching to original one hour duration. If the therapy is to be continued for 21 days, then ordinarily between 7th to l4th day the duration is kept 1½ hours and it is reduced after l4th day by 5 minutes daily to come to one hour by 21st day. Usually Dhārā therapy is not given for more than 21 days. It is believed that by

irrigation of the head the effect of medication percolates upto the limbs and entire body by 21 days.

Some times during this therapy there is a risk of aggravation of *Vāta*. In such circumstances one should give simultaneous *Sarvāṅga Snehana* and *Swedana*. For this, four experienced attendants should apply oil and massage with uniform pressure and temperature. The fifth attendant should constantly help in keeping the oil suitably warm. After completion of the *Dhārā Krama* the head of the patient should be carefully wiped off. Then the patient is given warm medicated water bath after oil *Abhyaṅga*. The patient should be provided internal *Snehana* with oils suitably processed by *Sneha Pāka Vidhi*. Subsequently he should be brought on normal diet and is discharged from the hospital.

THE KĀYA SEKA

This special treatment is maximum popular in Kerala. Procedure provides simultaneous *Snehana* and *Swedana*. In Hindi this is called as *Kāya Seka* or *Taila Seka*. In local Malayalam language it is termed as *Pizhichil, Mukki Piḍiccila* or *Piḍinjupa-Karcca*. In classical Āyurveda too, warm oil bath is indicated for the treatment of *Vātaja vyādhis*. Such therapy has been advocated for *Sancaya, Prakopa* and *Prasara* of *Vāta*. The *Uṣṇa, Rūkṣa, Guṇa* cause *Sañcaya* of *Vāta* while *Śita Guṇa* causes *Vāta Prakopa. Uṣṇa, Snigha Guṇa* cause *Śamana* of the *vāta*. The popular *Kāya Seka* therapy is also based on similar principles in the treatment of *Vāta vyādhi*. This procedure is popularly applied in all those conditions where *Snehana* is indicated such as *Śoṣa, Pakṣavadha, Avavāhuka, Ākṣepa*ka, *Apatantraka, Jihwā Stambha, Hṛdgraha, Gṛdhrasī, Visvāci, Rakta Vāta, Ardita, Kampa, Stambha, Prasupti, Sarvāṅgavāta, Ekāṅgavāta, Gulma, Prameha, Vātarakta* etc.

The ancient *Saṃhitās* too describe such therapies, but they are not described in details. *Aṣṭāṅga Hṛdaya* advocates the therapy of lying down in a *Droṇī* full of oil (AHU 6). Similarly there is description of luke warm *Ghṛta* bath and sleeping in *Taila Droṇī* for patients of *Stambha, Ākṣepa, Śūla, Āyāma, Ardita, Vāhyābhyantarāyāma* etc. (A. H. Sū, 21). Suśruta also describes medicated oil bath in the context of treatment of *Vāta Vyādhi* and

Vraṇa. Caraka also mentions the use of oil bath in *Vāta Rakta*. The Ācāryas have described two kinds of *Snehana i.e.* (1) Internal *Snehana*, (2) External *Snehana*. This Keralīya *Kāya Seka* is good for external *Snehana*. In *Siraḥ Seka* only *Taila Dhārā* is advocated, but for *Kāya Seka Catuḥ Sneha* is indicated. Here *Yamaka* or *Trivṛta* or *Mahā Sneha* is advocated. They are selected with due consideration of *Doṣas* and the *Vyādhis*. One opts to use the oil in warm, luke warm or cold form according to the state of the *Doṣas* and the disease. The oils are prepared in the same way as is done in case of *Śiraḥ Seka* and *Dhārā Drava*.

THE PROCEDURE

Kāya Seka is essentially a procedure where the whole body of a patient is oleated and massaged with warm oil. For this therapy, on an auspicious day and time the physician, after memorising his favourite god and after *Swasti Vācana,* takes the patient after external purification and makes him sit in *a Droṇī* keeping his face towards east. Now he should appropriately pour medicated oil on the head of the patient and also over the body. Now the patient is asked to lie down in the *Droṇī* supine, keeping the head on a pillow, with limbs extended. Four attendants are asked to sit comfortably two on each side of the patient, one above the *Nābhi* and the other below the *Nābhi* of the patient on both sides. All the four attendants are asked to apply oil of uniform temperature with uniform pressure on the respective parts of the body simultaneously. *A Poṭṭali* of folded cloth piece well soaked in *Seka Dravya* is used for applying *Seka* over the body by left hand of the attendant, who uses his right hand to strain the material moving the hand downwards rapidly and repeatedly. Such a *Seka* applied methodically and systematically produces uniform heat energy and pleasure throughout the body. The *Secana Dravya* gets uniformly and conveniently absorbed throughout the body. The Fifth attendant goes on collecting the *Seka Dravya* overflown in the *Droṇī,* and goes on re-adding the same to the original pot containing the *Seka Dravya* lying on a stove for constant heating. The Four massage attendants continue to *Seka* the body and massage in *Anuloma gati.*

After completing the *Śeka* on the anterior part of body, the patient is asked to take a turn on left side and the procedure is

repeated. Then he is asked to take right turn and the procedure is repeated and then on the back.

If *Śirodhārā* is also to be administered simultaneously with *Kāya Seka,* then the procedure is followed only in supine position. However, other sides of the body may receive *Kāya Seka* before or after completing the *Śirodhārā.*

Kāya Seka is also administered for one hour and increasing upto 1½ hours for 14 days or 21 days following the same schedule, as has been described earlier in case of *Siraḥ Seka.* In the end of the procedure the patient is asked to sit and his shoulders and the back is vigorously massaged. Then the patient is given a bath. At the same time the oils and medicaments remaining on the body of the patient are removed by rubbing with a towel.

In this therapy it is advisable to prepare fresh oil for use every day. But ordinarily in common practice the remainder of the used oil on one day is re-used the next day or even on the third day. But on fourth day it is essential to have a fresh oil. The pattern is followed till the 21st day.

This therapy is also used in normal persons for promotive care. Ordinarily in normal persons *Tila* oil or cow *ghee* is used for preparing the *Seka Dravya.* Some medicated oils which cause *Bṛṃhaṇa* are also used.

The *Sneha Dravya* is selected only after full *Rogī-Roga Parīkṣā* when nature of the illness and the strength of the patient become known. The duration of therapy is also determined in similar considerations. In a subject of good mental and physical health, *Kāya Seka* may be administered even twice a day, while in weaker persons it may be done on alternate days or even after longer intervals like 3 or 4 days or even 5 or 6 days.

In *Pittaja* diseases the oils or *ghṛtas* may be used in cold condition, but in *Kaphaja* and *Vātaja* diseases luke warm oils are used. However in all conditions it is advisable to use cold oils for application on the head.

Certain authorities suggest that in *Vāta Paittika* diseases *Kāya Seka* should be done for 5 *Nadikā* or 2 hours. In this process oil should remain on the body of the patient for a duration

equal to the counting numbers upto 300. Massage should be done only after this. But this duration may vary from 300 to 500 number counting time depending upon the nature of the patient and his disease. The ancient *Ācāryas* state that this oil penetrates only upto the skin on first day but when the procedure is continued upto 7 days, this oil percolates through all the seven *Dhātus.*

In some conditions milk is used for *Kāya Seka.* In such conditions fresh and immediately milked milk is used and milk is changed every day. Milk is not stored. In this case *Dugdha Seka* is started only after 3 days of *Sneha Seka.* D*ugdha Seka* is not started directly.

COMPLICATIONS OF KĀYA SEKA

Excessive or prolonged too many repeated *Kāya Seka* may lead to some untoward effects such as *Dāha,* skin eruptions, easy fatigue, hoarseness of voice, joint pain, vomiting, haemorrhage, fever, urticaria, etc. If this happens *Kāya Seka* should be immediately stopped and the patient should be asked to do warm saline gargles and he should be given *Nasya* followed by *Śuṇṭhī* decoction. In the evening he should eat boiled rice added with *Pippalī.* Next day he should receive oleus enema/ *sneha vasti.* On third day a saline enema *(Lavaṇa Vasti)* should be given and on fourth day he should be treated on the lines of *Sneha Vyāpat.* On fifth day if the patient recovers, he should be put on previous schedule of therapy. Some authorities also advocate *Vamana* and *Virecana* for *Sneha Vyāpat.* In such a condition, in case of *Vyāpatti* of this therapy it is suggested to give *Vamana, Virecana, Snehavasti, Rūkṣavasti* and *Nasya* etc. full *Pañcakarma.*

PIṆḌA SWEDA OR NAVARAKIZI

Piṇḍa Sweda or Navarakizi is one of the most popular therapies of K*eralīya Pañcakarma.* This procedure is also described in classical Āyurveda. As a matter of fact *Piṇḍa Swedana* is based on the principles of *Saṅkara Sweda* which is one of the 13 *Sāgni Sweda* procedures described by Caraka Saṃhitā. Caraka has also made a direct mention of *Piṇḍa Sweda* and has advocated the use of *Piṇḍa* consisting of *Tila, Māṣa, Kulattha, Amla Dravya, Ghṛta, Taila, Māṃsa,* cooked rice,

Pāyasā, Kṛśarā etc. for the purpose of *Swedana* (C. S. Sū. 14:25). There is no mention of *Piṇḍa Sweda* in the Saṃhitās of Suśruta and Vāgbhaṭṭa. In these texts four kinds of *Swedana* have been described viz.

(1) *Tāpa Sweda,* (2) *Ūṣma Sweda,* (3) *Upanāha Sweda,* (4) *Drava Sweda.* Here *Piṇḍa Sweda* is incorporated in principles under *Ūṣma Sweda. Ūṣma Sweda* is described to be of eight kinds including *Piṇḍa Sweda.* Caraka advocates the use of *Swedana* with due consideration of suitable medicaments according to the *Doṣas.* Here depending upon *Doṣa, Dūṣya, Roga* and *Rogi* one uses *Tila, Māṣa, Amla, Taila, Māṃsa, Odana, Payāsā* or *Kṛśarā* according to the condition to be treated. But in *Keralīya Piṇḍa Sweda* only *Ṣaṣṭika* rice *pāyasā* is used for *Piṇḍa Swedana.* This type of description is available in Aṣṭāṅga *Hṛdaya.*

Piṇḍa Sweda is indicated in serious chronic diseases like *Sarvāṅga Śoṣa, Vāta Vyādhi, Āyāma, Ākṣepa, Saṅkoca, Stambha, Pakṣavadha* etc. Caraka and *Vāgbhaṭṭa* have advocated it in other diseases too (C. S. Ci 26; A. H. Sū 17).

Method of Preparation : 12 *Pala* or 576 gm *Balā Mūla* is taken crushed and boiled with 16 times the quantity of water till it remains one fourth. This decoction is now filtered. To half of the decoction (1½ kg) an equal amount of milk is added plus 12 *pala* (576 gm). *Ṣaṣṭika* rice to cook on mild fire into a good *Pāyasam* without allowing it to burn or to get pasted with the cooking pot, by repeated stirring. Now so prepared semisolid *Pāyas* is divided in 8 parts each part placed over 8 separate clean smooth cloth pieces. Now each one is tied in the respective cloth piece to form rounded *Pinḍas* in such a way that *Pāyasaṁ* may not leak and at the tying end some cloth end is left for holding the *Pinḍa.*

The remaining half of the decoction mixed with another equal amount of milk is saved separately for *Swedana;* this mixture is kept in a wide mouthed pot big enough to easily accommodate 3 kgs of liquid and 4 *poṭṭalis* of *Pinḍas.*

Some physicians advise the preparation of *Pinḍas* out of *Māṣa, Kulattha, Godhūma, Sarṣapa, Tila* etc., but the *Ṣaṣṭika Pāyasa* is the most popular.

THE METHOD OF SWEDANA

The experienced physician should establish the *Droṇī* on an

auspicious day and moment and make the patient sit in the *Droṇī* with his face towards east. First of all suitably medicated oil be applied on the head of the patient followed by oleation of whole body systematically. When preparatory *Snehana*/oleation is complete, the patient should lie down on his back in the *Droṇī*. Now two massagers on each of the two sides perform *Swedana* systematically one on the upper part of the body from neck to lumbar region and the other on the lower part of the body from lumbar region upto the foot end. Similarly the two massagers on the other side treat that part of the patient's body. In case of male patients, the massagers should be males while in case of females, the massagers should be females. The patient should feel easy and comfortable. The *Swedana* should be done in *Ānuloma Gati* i.e. from above downwards. The fifth attendant should help in keeping the fomentation liquid *(Kwātha + Dugdha* mixture) hot and should help in heating the *Poṭṭalis* by dipping in the liquid and should assist the massagers by transferring the *Poṭṭalis.*

The fomentation should be done systematically with uniform pressure and temperature all over the body. Temperature of *Poṭṭalis* and pressure of massagers hands be such that the patient may sustain comfortably. This really needs experienced and skilled massagers. In this procedure, all the four massagers work in coherent and uniform rhythmicity. The entire body is fomented in seven postures as described below :

Posture 1-Sitting with legs extended on 90^0 keeping the hands on the two sides. This posture is used specially for massaging the legs and the back.

Posture 2-Lying down on back in *Śavāsana* posture for fomentation/massage of the front part of the body.

Posture 3-Lying on the right side of the body.

Posture 4-Lying on back in *Śavāsana* again.

Posture 5-Lying on left side of the body.

Posture 6-Lying down on back in *Śavāsana* again.

Posture 7-Sitting with legs extended on 90^0 keeping the hands on sides as in Posture 1.

Swedana is done for 15 minutes in each of the 7 postures

coming to a total of 1 hour 45 minutes. This time duration may be increased or decreased according to the need of the patient and the disease. After completing the *Swedana* the body is rubbed with hands for 5 minutes. The *Piṇḍas* are opened and the *Pāyasam* is spread on the body and rubbed well. Subsequently the *Swedana Dravya* is removed from the body with the help of *Nārikela Patra*. Then the body is wiped off with oily piece of cloth. Then *Uṣṇa Seka* is given. Then medicated oil bath is given followed by bath with luke warm water. Interval between completion of *Swedana* and final bath should not be more than 5 minutes. No hot water bath is given for the head.

This therapy is given daily or on alternate days. Depending upon the nature of disease the therapy is continued for 7 days, 11 days, 14 days, 21 days or 28 days. This *Piṇḍa Sweda* relieves tiredness, depression, drowsiness and insomnia. It stimulates *Agni* and promotes *Dīpana* and *Pācana*. *Āma Doṣa* is relieved. Appetite is increased. The channels of the body are cleaned. The lusture of skin is restored and *Tandrā* disappears. The body becomes soft. The stiffness of joints disappears. The excretory processes are directed to *Anuloma Gati*. This therapy imparts contentment and strength. When administered in consideration of *Doṣa, Dūṣya* state, *Piṇḍa Sweda* gives quick and good results.

THE ANNA LEPA

The ancient Ayurvedists have described the use of *Pradeha, Pralepa, Upanāha* etc. for the treatment of different diseases. With similar intention the Keralīya vaidyas also developed the *Annalepa* therapy for the care of early aging, *Dhātu Kṣaya, Kṣīṇa,* and *Dourbalya*. *Anna lepa* is usually advocated for patients where *Piṇḍa Sweda* is either contraindicated or is ineffective. In some patients where there is *Anubandha* of *Pitta* the *Ṣaṣṭika Pāyasa Piṇḍa Sweda* is not used and in such cases *Annalepa* is the treatment of choice.

Caraka has also advocated the *Lepa* of the *Pradeha* consisting of *ghṛta snigdha, godhuma cūrṇa* with goat milk in cases of *Vāta Rakta*. Similarly Vāgbhaṭṭa prescribes *snigdha Kṛśarā* added with *Vātaghna oil* or *Mudga Pāyasa* for *Lepa* in cases of *Visarpa, Rāga, Śopha* etc. Caraka in the context of *Vāta*

Rakta Cikitsā mentions the use of a *Lepa* consisting of drugs like *Madhuka, Asvattha* and similar others added with *Snigdha* milk in patients complaining of *Rāga* (redness), *Dāha* (burning) and *Rujā* (pain). Thus *Anna Lepa* seems to be an ancient classical Ayurvedic treatment which was taken up by Kerala practitioners and is continuing today.

THE PREPARATION OF ANNALEPA

The procedure of preparation of *Anna Lepa Dravya* is the same which is used for preparing the *Piṇḍa Sweda Dravya*. The same methods and proportions are followed.

THE METHOD OF ANNALEPA TREATMENT

The patient is asked to lie down in a *Droṇī*. Luke warm *Lepa* is applied all over the body except the head. At first instant only one fourth of the *Payasa* is used for *Lepa*. When *Pāyasa* gets cold it is reheated and is applied as *Lepa* 3-4 rounds. Some physicians ask their patients to remain lying quietly for some time after *Lepa Karma,* while others advocate oleation massage in *Anuloma Gati*. This *Saṁvāhana Abhyaṅga* is not done with dry hands without oil. It is also not done after drying of the *Lepa*. The *Anna Lepa* therapy is administered in Seven body postures as described above for *Piṇḍa Sweda* therapy. *Anna Lepa* procedure is also continued for 1½ hours. When *Lepa* becomes cold it is made warm with mild hands.

After 1½ hours of treatment the *Lepa Dravya* is removed with the help of *Tāḍa Patra* or *Nārikela Patra* and then *Snehana Karma* is done, first on the head, then the whole body. After *Snehana,* warm water wash is given. Then oil remaining on the body is dried by rubbing with dry *Māṣa Cūrṇa*. Then a medicated luke warm water bath is given. This is followed by *Sneha Pāna* and *Pathya.*

THE ŚIROLEPA

The ancient Āyurvedic texts describe the use of *Śirolepa* in the treatment of diseases of Head and Neck *(Ūrdhva Jatrugata vyādhis)*. Caraka mentions the use of *Śirolepa* with the paste consisting of *Candana, Kuṣṭha* etc. mixed with *Ghṛta*. Suśruta also prescribes *Lepa* and *Pariṣeka* of the head with *Ghṛta* recipes

in cases of *Pittaja* and *Raktaja Śiro Roga* (S. S. Ū. 26). Similarly *Vāgbhaṭṭa,* prescribes *Snigdha-Śīta Lepa, Seka,* and *Śodhana Vasti* in *Pittaja Śiro Roga* (A. H. U. 24). The same procedures are adopted in Keralīya practices for the treatment of *Siro Roga, Ardita, Pakṣavadha, Pālitya* and *Khālitya* in the form of *Śirolepa.*

ŚIROLEPA PREPARATION

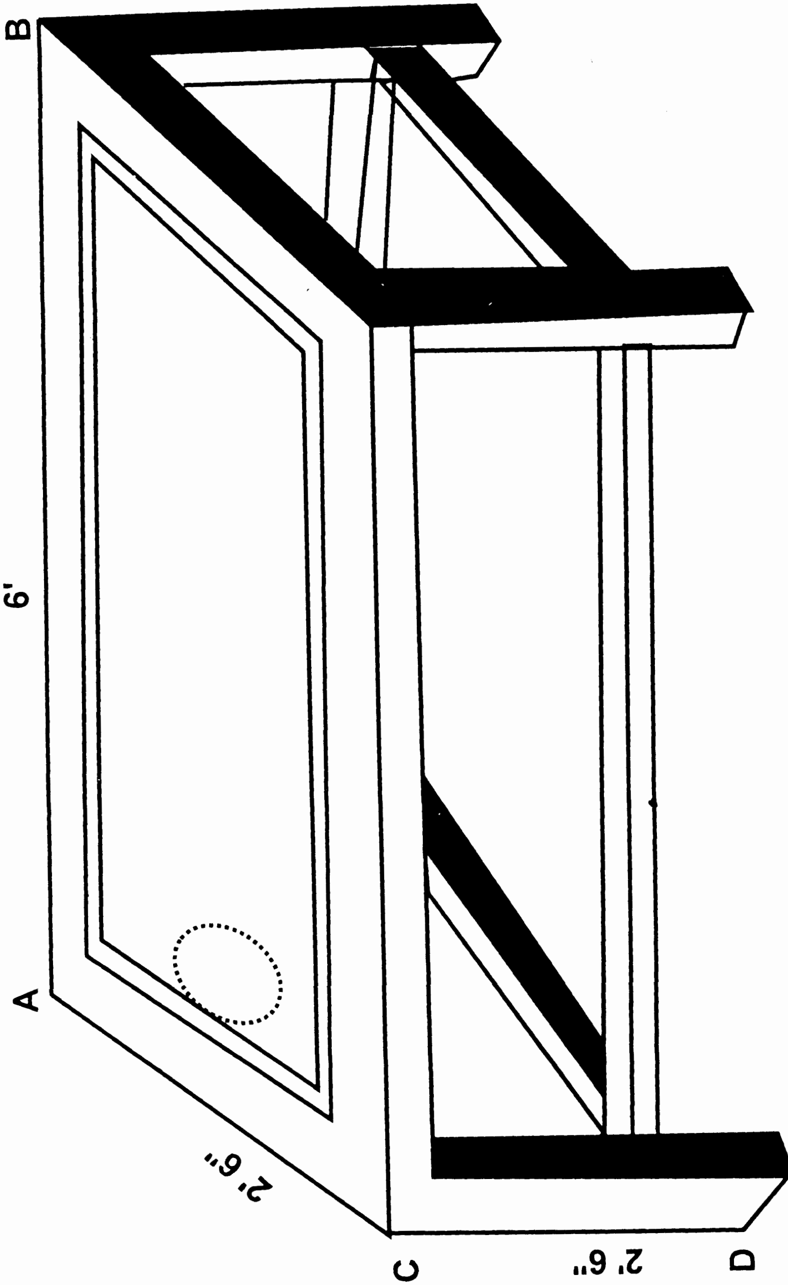
One *Kuḍava dry Āmalakī Cūrṇa* is soaked in water in an earthen pot overnight. For this, only that amount of water is put in *Āmalakī Cūrṇa* which is completely soaked up by the night and no free water remains. Next morning the wet *Āmalakī* is pasted with *Takra*. Then it is heated with *Takra*. When it becomes thick, it is taken for use as *Lepa.*

THE METHOD OF ŚIROLEPA

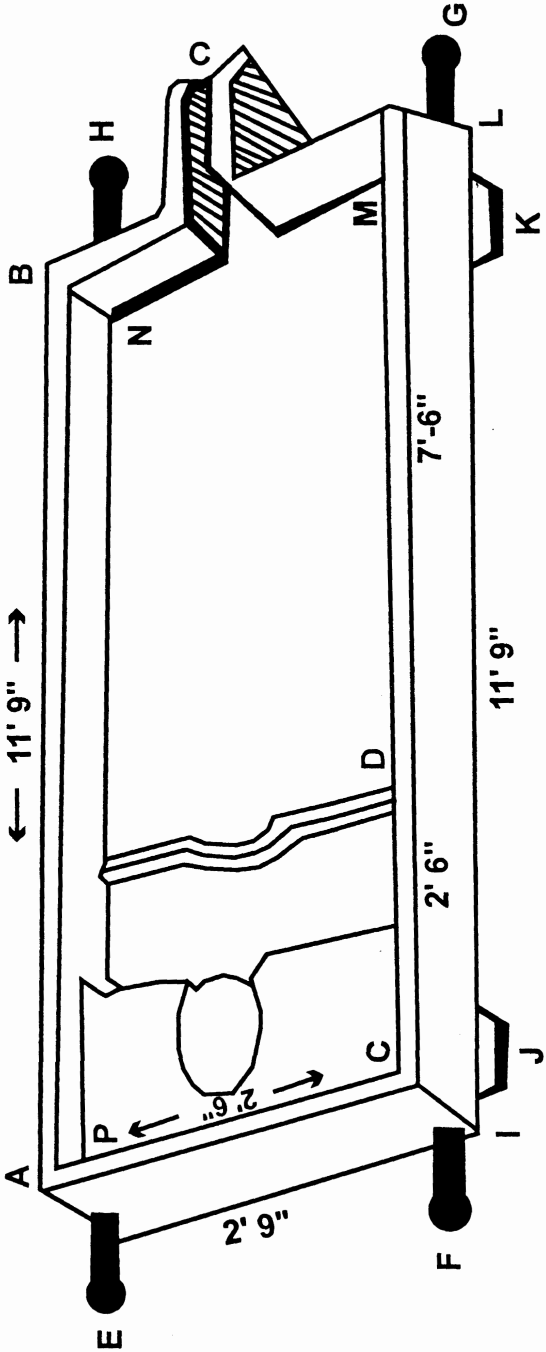
Before applying *Śirolepa, a Snehana* to the head is applied with medicated oil. Then the hairy part of the head is applied the *Lepa* of 1/4 to 1/3 inch thickness. No *Lepa* is put on the forehead. After *Lepa* the head is wrapped with banana leaves. Simultaneous to this therapy, the patient is also given whole body *Snehana*. The *Lepa* remains on the head for 1-½ hours after which it is removed and *Snehana* is applied. Then the patient is given bath etc. as per methods described earlier. The *Śiro Lepa* therapy is given only once or on alternate days or daily for one week according to the clinical condition to be treated. *Śirolepa* therapy gives results some what similar to *Takra Dhārā* treatment. The medicaments for Ś*iro Lepa* are chosen according to the disease. Ordinarily *Balā, Nāgara Mustaka, Madhu yaṣṭī, Triphalā, Banśa Locana, Daśamūla* etc.

ŚIRO VASTI

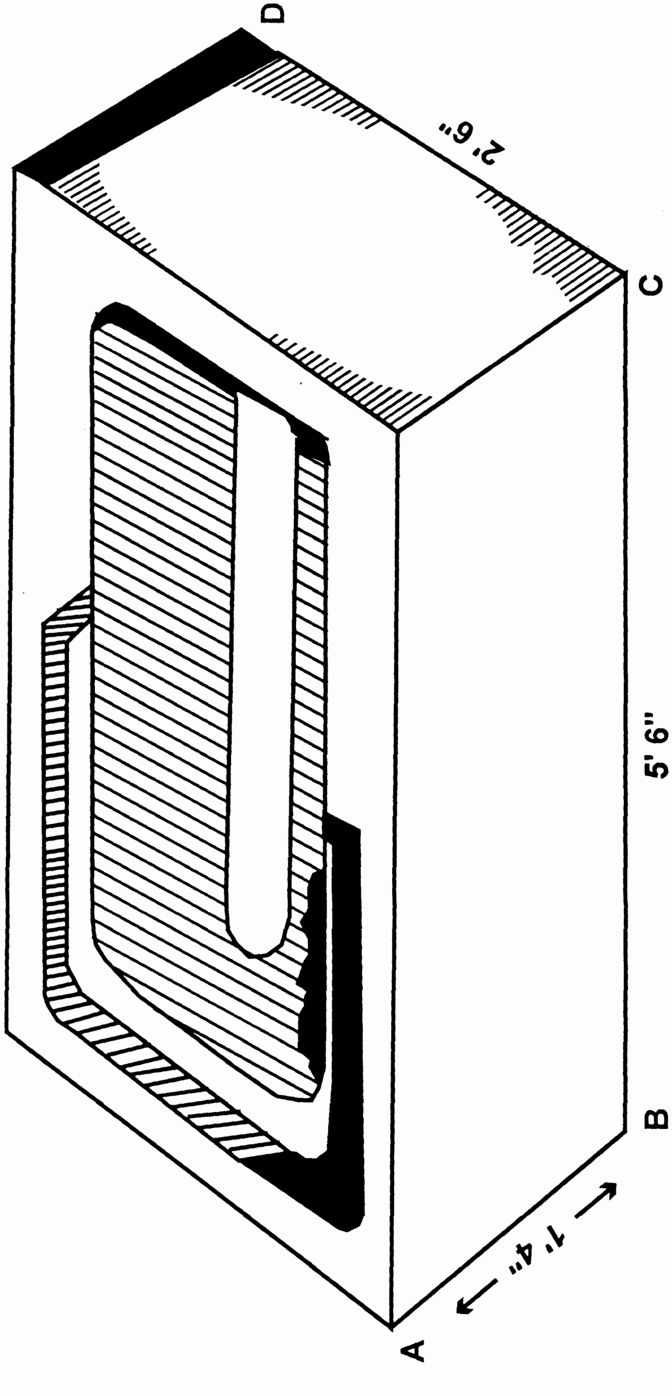
Certain Ācaryas also use *Siro Vasti* in the schedule of *Śiraḥ Seka*. This procedure is also practised in other schools. This is not the special therapy of *Keraliya Pañca Karma*. This is not counted under *Pañca Karma*. If we count this sixth one, the total therapy schedule becomes *Ṣaṭkarma* instead of *Pañca Karma*. However, *Śiro Vasti* is also an useful procedure for treatment of *Śiro Roga*. Here the head is provided with a scuff of leather like a cap with open base. This base is filled with medicated oil which is allowed to stand for an indicated period of therapy.



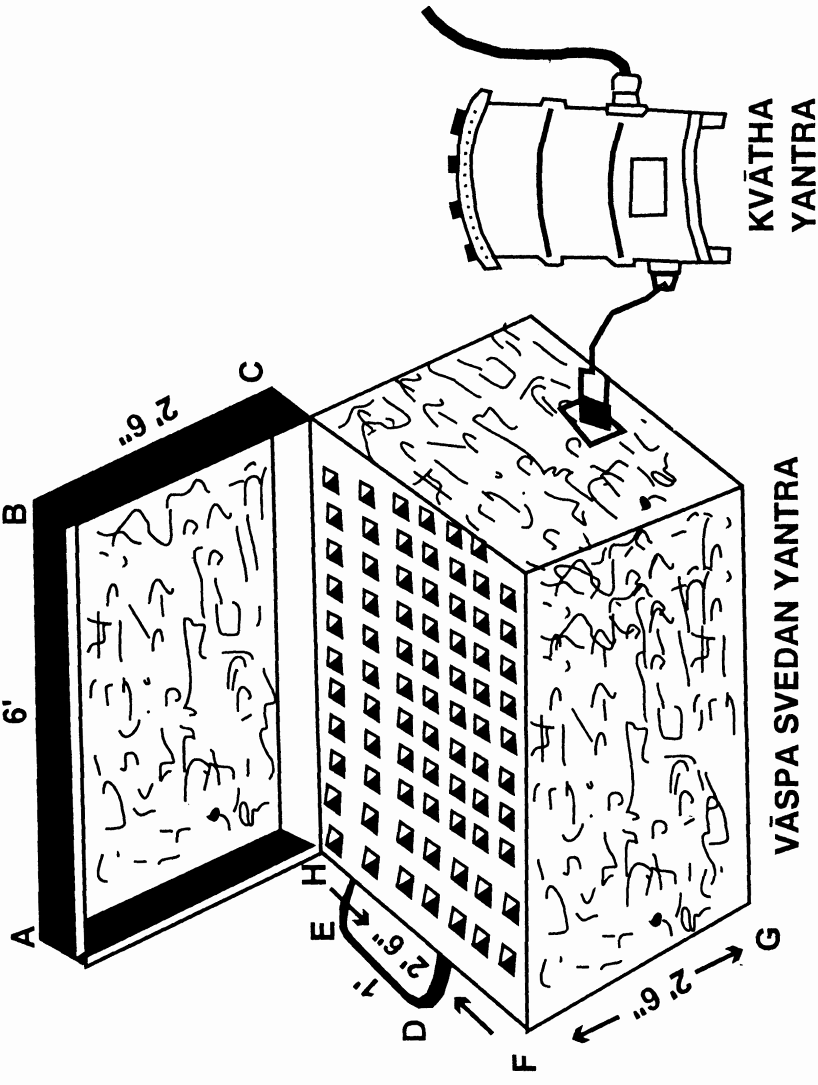
ABHYANGA TABLE

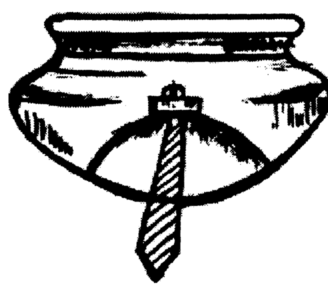


TAILA-DRONI

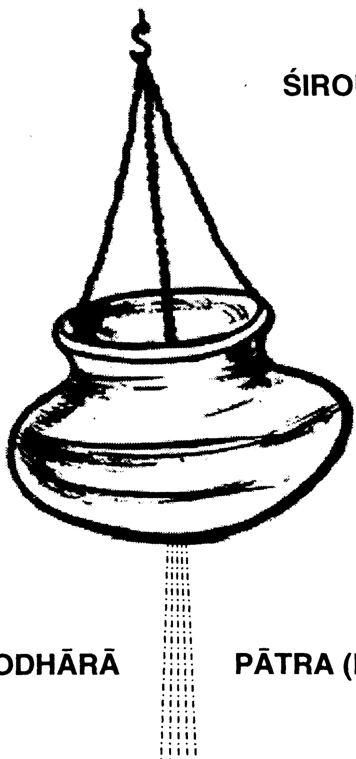


AVAGĀHA TUB

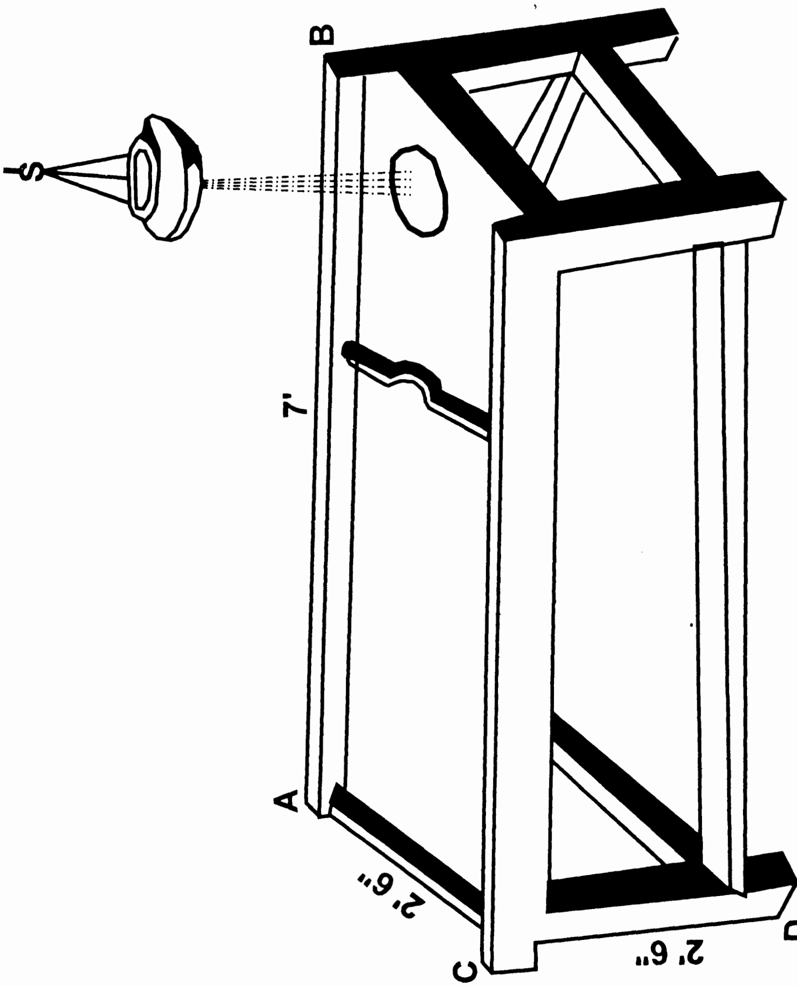

A
B
C
6'
2' 6"
H
E
D
F
G
7'
2' 6"
2' 6"
VĀSPA SVEDAN YANTRA
KVĀTHA YANTRA



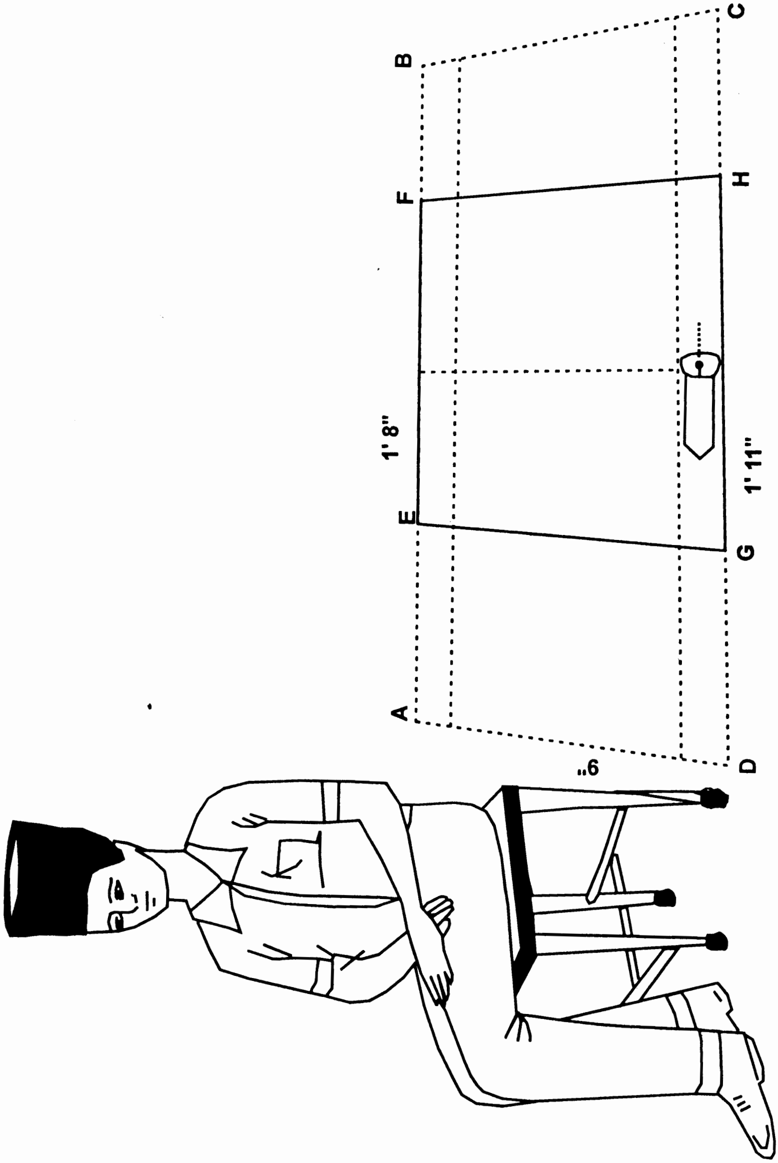
ŚIRODHĀRĀ PĀTRA



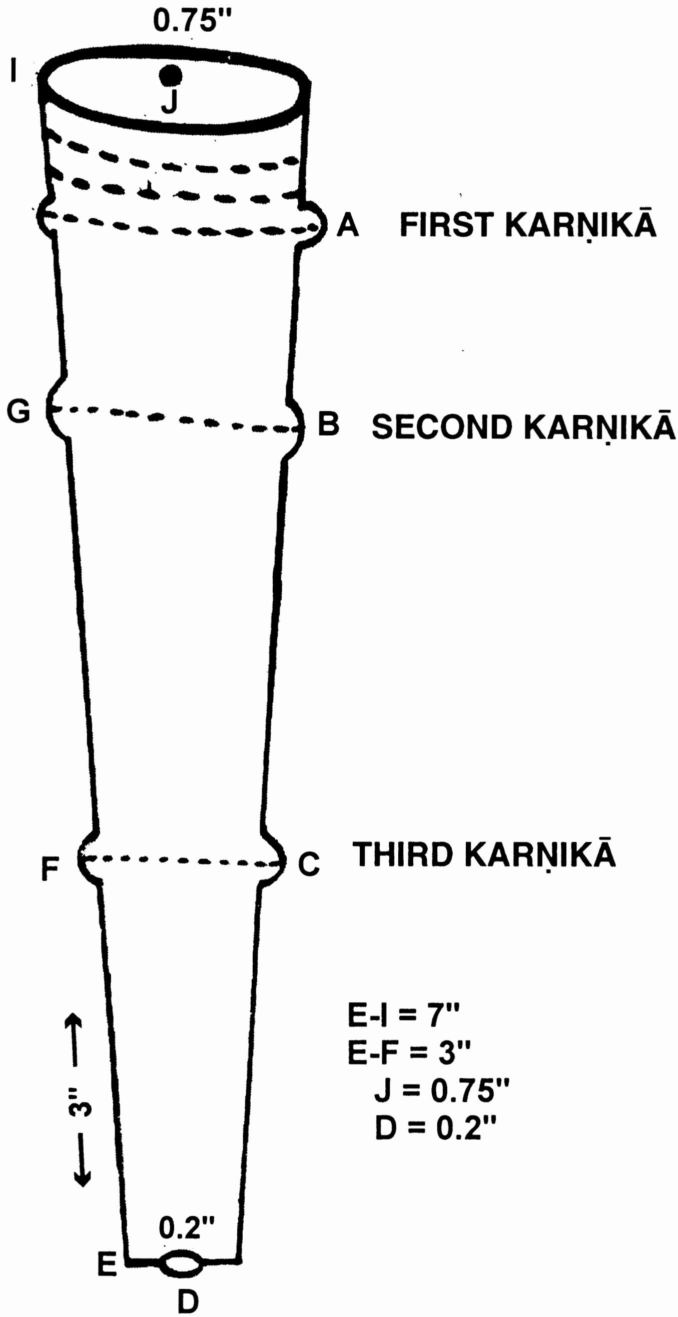
ŚIRODHĀRĀ PĀTRA (FUNCTIONING)



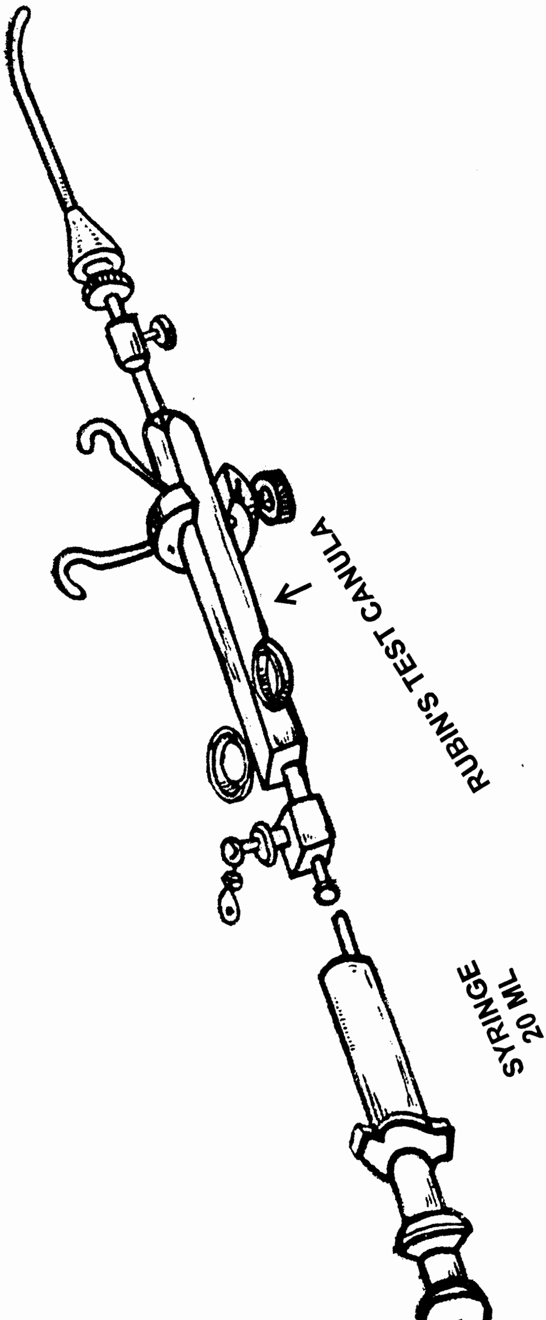
DHĀRĀ TABLE



ŚIRO-BASTI CAP

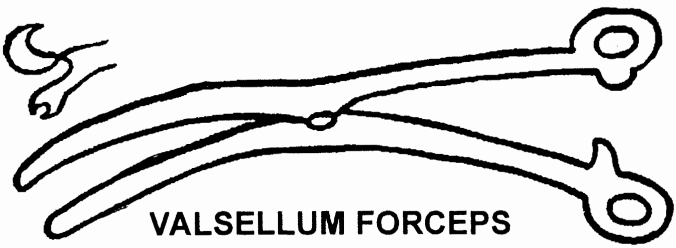

0.75"
I
J
A
FIRST KARṆIKĀ
G
B
SECOND KARṆIKĀ
F
C
THIRD KARṆIKĀ
3"
E-I = 7"
E-F = 3"
J = 0.75"
D = 0.2"
0.2"
E
D

BASTI NETRA

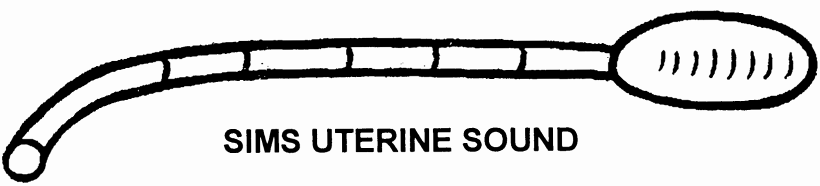


UTTARA BASTI YANTRA

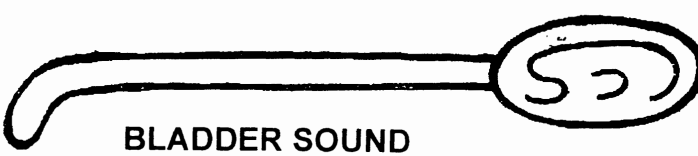
DIFFERENT TYPES OF YANTRA'S



VALSELLUM FORCEPS



SIMS UTERINE SOUND

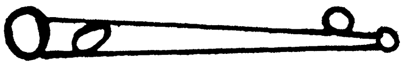


BLADDER SOUND



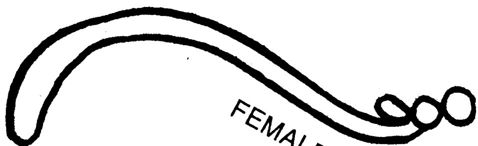
BLADDER SOUND

DIFFERENT TYPES OF YANTRA ŚASTRA



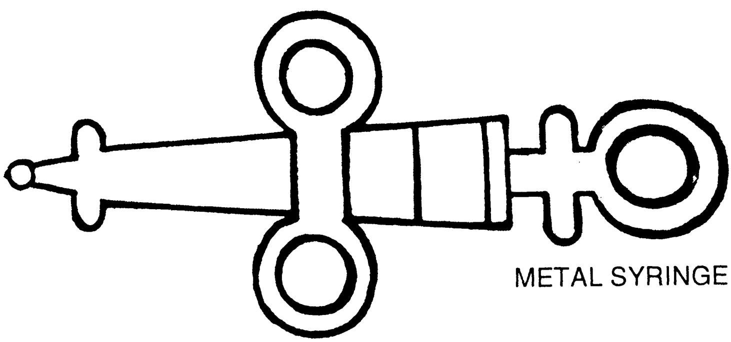
1

FEMALE CATHETER



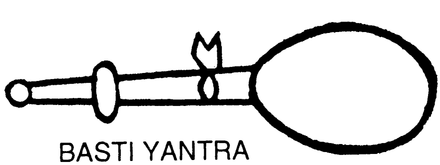
2

FEMALE CATHETER



3

METAL SYRINGE



4

BASTI YANTRA



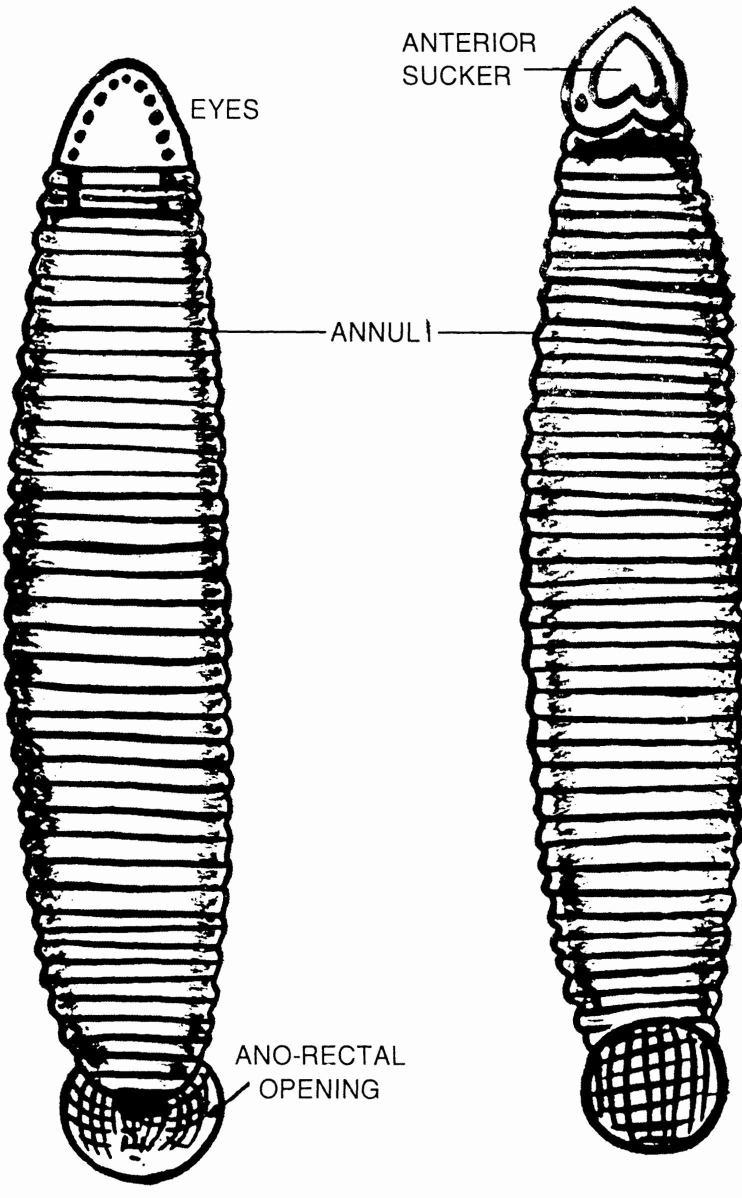
5

KUṬHĀRIKĀ ŚASTRA



6

BRIHI MUKHA ŚASTRA



JALAUKA (LEECH)

PAÑCA KARMA THERAPY IN WOMEN, CHILDREN AND THE ELDERLY

All schools of Medicine give special consideration to the care of women, children, the elderly and immunocompromised individuals.

Although the medicaments and diagnostic procedures for different diseases are the same but considering the specificity, dosage and procedural requirements the diagnosis and treatment differs significantly in different categories of clients. This is for this reason that specialised disciplines like Paediatrics, Geriatrics and Gynecology had to be developed separate from Medicine in general. Besides the need of choosing specialised dosage and form of medications and diagnostic adoptions the other reason of specialised care system is the fact that many disease conditions are age and sex specific and therefore one needs to be conversant with the prevalence of diseases of women, children and the elderly.

Similarly, the Ayurvedic texts too emphasise the need of specialised care. In the context of *Pañca Karma* therapy while considering the indications and contraindications of different therapeutic procedures special attention is paid to *Bāla, Bṛddha, Durbala* and the *Garbhiṇī*. Many major *Saṅśodhana Karmas* are contra-indicated in children, elderly individuals and in the pregnant women; if at all the therapies are to be given, it should be given with necessary precautions and appropriate modifications.

In view of the contemporary needs of today, attempts should be made to develop specialised methods of *Pañca Karma* therapy and *Saṅśodhana* for different categories of high-risk individuals. The aim of this chapter is to visualise the modified *Pañca Karma* therapy procedures for the particular category of individuals.

1. *Pañca Karma* Therapy in women
    - (a) During normalcy.
    - (b) During pregnancy.

2. *Pañca Karma* Therapy for children.

(a) In normalcy.

(b) In diseases of children.

3 . *Pañca Karma* Therapy for the elderly

(a) In normalcy.

(b) In diseases of the elderly.

4. *Pañca Karma* Therapy for the Immuno-compromised individuals.

5. *Pañca Karma* Therapy specific to different diseases.

PAÑCA KARMA IN THE WOMEN

In the state of normalcy there may not be much difference in the *Pañca Karma* treatment of a woman patient than that of a man. However in general the women being soft and tender in constitution, vigorous therapies may be avoided. Similarly the frequency, duration and intensity of different therapies should be less in women than men. For instance the doses of *Ghṛta* during *Snehana*, force of pressure during massage, degree of heat during *Svedana*, duration and hight of *Śirodhārā*, heat and pressure of the *Piṇḍas* during *Piṇḍa Sveda*, intensity of *Vamana, Virecana, Basti* and *Śirovirecana* all need to be of lower intensity at least by 20% on average. However, the actual prescription should depend on the discretion of the treating physician who should evaluate each case individually *(Puruṣaṁ Puruṣaṁ Vīkṣya)*.

A woman during pregnancy is essentially a high risk individual both from her own health point of view and from the point of view of the growth and health of the baby which she is carrying. Any drastic and vigorous therapy is contra-indicated as it may induce abortion and miscarriage. Therefore, *Tīkṣṇa Nasya, Vamana* and *Tīkṣṇa Virecana* should not be prescribed at any stage of pregnancy. Mild/*Mṛdu* Virecana is always advisable. Similarly *Basti* of *Nirūha* type should be avoided. Some times nutritive *Bastis*, i. e., *Yāpanā Basti* may be advocated to be given with due care. Anatomically the urinary bladder, Rectum and the uterus are located adjacent to each other and hence any invasive procedure with any of these three may influence all. Hence due precaution is essential.

The practices that may be useful in pregnant women are *Abhyaṅga, Śirodhārā, Kāya Seka, Mṛdu Virecana* and *Yāpanā Basti*. These treatments may promote the overall health of the women and may help in growth of the foetus and possibly may help in safe labour. Hence some such components of *Pañca Karma* Therapy may be included in Antenatal Care and *Garbhiṇīcaryā*.

Therapies in women for the treatment of several women's diseases also need careful consideration. The major female diseases for which a woman may seek *Pañca Karma* Therapy are infertility, dysmenorrhoea, menorrhagia, leucorrhoea and coital pain.

Infertility is a major problem in women for which a patient may seek advice of a *Pañca Karma* Physician for an adjunct treatment. Infertility is a multifaceted disease with multifactorial aetiology ranging from primary organic deficits and agenesis of reproductive organs, hormonal disfunctions, blockade or insufficiency of fallopian tubes etc. In all such diseases *Saṅśodhana* therapy with different kinds of classical as well as traditional *Pañca Karma* procedures are considered to be of use. Full *Pañca Karma* regimen with *Snehana - Swedana - Vamana - Virecana*, *Basti* and *Nasya* are claimed to bring about a state of biopurification in the body leading in turn to an optimisation of endocrine and energetic functions besides their *Srotośodhana* effect. *Pañca Karma* therapy followed by fertility promoting medications like *Rasāyana, Bājikaraṇa* and *Prajāsthāpana* drugs are advisable. Many Ayurvedic physicians advocate specialised *Uttara Basti* (Uterine Basti) treatment for *Garbhāśaya Śodhana* to promote receptivity of the endometrium and patency of the cervix. However *Uttara Basti* should be given only by experienced doctors with all aseptic precautions to avoid any untoward effect.

The patients of dysmenorrhoeas also need *Pañca Karma* Therapy on the same lines as mentioned above. The patients presenting with cervical spasm, cervical erosion and similar defects are expected to be benefitted by application of medicated *Picus* and *Uttara Basti* treatment. All such treatments relieve the organic and functional deficits and promote fertility. *Abhyaṅga* and massage therapy as well as *Kāya Seka* and *Piṇḍa Sveda*

therapy help such patients through their systemic effect by way of improving the overall health and neuromuscular coordination as well as through improved haemodynamic and endocrine functions.

Leucorrhoea is another common disease of the women for which large number of patients of all age groups visit hospitals and clinics. The conventional management of leucorrhoea is not satisfactory and hence the patients frequently change their doctors and a large number of them seek help from Ayurvedic practitioners. Leucorrhoea is caused by wide range of aetiological factors including nutritional and hygienic factors, infections as well as hormonal dysfunctions. *Nidāna Parivarjana* or elimination of cause, nutrition and treatment of local infection are the sheet anchor of treatment. Such patients if treated with vaginal douches with different kinds of plant drug decoctions such as *Udumbara, Jāti* and *Babbula* and applications of *Picus* and medicated vaginal wash, the results are more sustained.

Menorrhagias and dysfunctional uterine bleedings are the other important ailments in women needing management. *Picu* application, *Abhyaṅga* and *Yāpanā Basti* are advocated. *Śirodhārā* and *Kāya Seka* also help these patients.

PAÑCA KARMA IN PAEDIATRIC PRACTICE

Pañca Karma Therapy and certain related therapeutic procedures have useful scope in paediatric practice. However, the children, being very soft and tender and fast growing and developing individuals, any therapeutic intervention need to be considered with due caution and proper adoption taking into account the soft, tender nature and fast growth phenomenon in the organism. All intense and vigorous therapies should be avoided.

Children below the age of 12 years are not suitable for *Pañca Karma* therapy except *Abhyaṅgas*, massage and selected forms of *Basti*. Soft gentle massage with nutrient oils is always useful for children of all age groups. Childhood being a *Kapha* predominant age, internal *Snehana* is not much indicated. Mild degree of *Svedana* of reduced duration is given as and when needed. *Vamana* even if therapeutically indicated should not be given below the age of 14 years because of risk of aspiration and

uncoordinated pressure on throat and stomach. *Nasya* too should be given with care preferably with soft medications. *Virecana* of mild to moderate intensity can be given. *Basti* is generally safe. *Śirodhārā, Śirobasti* and *Kāyaseka* are advisable in children according to the therapeutic indication. Similarly *Piṇḍa Sveda* is a good treatment in all age groups of children with a precaution that *Piṇḍa* should not be very hot. The temperature should be chosen by asking the child whether he is enjoying a particular degree of heat.

Consideration of the diseases of children where certain *Pañca Karma* procedures may be specifically indicated from therapeutic point of view is important. The commonest clinical condition for which paediatric age group of patients are referred to *Pañca Karma* Centres are residual polioparalysis and other forms of paralytic diseases, myopathies specially pseudo-hypertrophy muscular dystrophy, Juvenile Rheumatoid disease, mental retardation, hyperactive children, cerebral palsy, ulcerative colitis, bronchial asthma and other allergic diseases.

Piṇḍa Sveda of *Keralīya* tradition is a good effective therapy for all froms of residual paralytic conditions including polio. Well-regulated *Piṇḍa Sveda* with *Śaṣṭi-Śāli Daśamūla-Kṣira Piṇḍa* is an extremely well tolerated and therapeutically beneficial treatment. This treatment helps in augmenting the microcirculation, in improving the tone and power of muscles with multifaceted physiotherapeutic and rehabilitative effect. *Piṇḍa Sveda* by virtue of the constituents of *Piṇḍa* induces nutritive effect on muscles and other body parts leading to an overall improvement in the health and physique of the patient. *Kāyaseka* with massage using properly chosen *Vātahara* oils is also indicated in these patients.

The patients of Juvenile Rheumatoid Arthritis in acute phase may be treated by local dry fomentation by sand-salt bolus on the inflamed joints. In the patients of long standing chronic Juvenile R. A. *Keraliya Piṇḍa Sveda* is the best treatment. In milder cases local massage with *Saindhawādi tail* followed by steam fomentation / *Nāḍi Sweda* is useful. In all such practices degree of heat and rhythm of the movement of *Piṇḍa*s and pressure of massage should be well controlled to make the treatment procedure comfortable and acceptable to a child

patient. Warm *Awagāha* with *Daśamula Kaṣāya* and or *Kāyaseka* using *Vātaharaṃ* tolerably warm medicated oil are indicated.

All child patients of Myopathies are also treated on the same lines using *Piṇḍa Sweda* and *Kāyaseka*.

All such treatment should be given for 15-20 days in continuation in one therapeutic session, to be repeated 3-4 times a year for several years. This helps in arresting the disease process and affords notable rehabilitative effect.

A number of children with varying degree of Mental retardation, Hyperactivity, Cerebral Palsy and other forms of neuropathies may seek *Pañca Karma* Therapy. All such children may be treated by selective *Pañca Karma* and *Rasāyana* Therapy. The suitable therapies for such children are *Abhyaṅga*, massage, *Piṇḍa Sweda, Kāyaseka, Śirodhārā* and *Śirobasti.* These treatments may be given 21 days in one therapeutic session to be repeated 3-4 times a year for several years. *Śirobasti* with *Brāhmī Ghṛta* and *Śirodhārā* with *Medhya Kaṣāya* are good treatment for these children.

Ulcerative colitis may afflict some child patients. A well-planned *Picchā Basti* shows good results in these patients. However *Basti* being an invasive therapy it should be given with due precaution ensuring that the *Basti* material is finely homogenous, free from irritants and is sterile. All aseptic precautions should be taken.

Bronchial Asthma is a common disease in children, the incidence of which is on rise. Similarly nonasthmatic upper respiratory tract allergy and infection, chronic rhinitis and sinusitis are prevalent. All these conditions are fairly intractable. Many of such patients are now referred for Ayurvedic treatment because the outcome of conventional modern treatment is not satisfactory. The *Pañca Karma* Centre at BHU has been managing such patients wfth satisfactory results. In such conditions the common therapies which are prescribed are *Vamana* (in cases above the age of 14 years), *Neti Kriyā, Dhauti* and *Kapāla Bhāti. Nasya Karma* with *Aṇutaila, Ṣaḍbindutaila* etc. may also be prescribed in selected cases. In Patients with allergic and infective pathologies of the throat *Kawalgraha* and *Gaṇḍuṣa Dhāraṇa* wlth decoctions of selected herbs are useful. Regular

gargling and throat wash with decoction of *Babbula* Bark and *Jāṭipatra* are indicated. In cases of chronic recurrent stomatitis *Śuddha Ṭaṇkaṇa Madhu Pratisāraṇa* in the oral cavity is very effective.

Chronic and recurrent skin diseases like Psoriasis, Eczema, Urticaria and chronic persistent skin infections should be treated with certain selected *Pañca karma* Therapy measures in addition to the conventional drug therapy. Local application of medicated oils like *Maricādi Taila* and a *Siddha* preparation named 777 oil and *Rasādi Lepa* are commonly used in the treatment of Psoriasis and Eczema. These diseases being very chronic and persistent need internal biopurification by full *Pañcakarma* regimen with *Vamana*, *Virecana* and *Basti*. However *Vamana* should be avoided in patients below the age of 14 years. Results of *Rakta Mokṣaṇa* i.e. blood letting specially by leech application have been very encouraging in cases of chronic intractable skin diseases like Eczema and localised persistent skin infections.

PAÑCAKARMA IN GERIATRIC PRACTICE

Certain procedures of classical *Pañcakarma* such as *Vamana* are of drastic nature therefore ordinarily they are contraindicated in elderly persons. As also stated earlier *Bāla, Bṛddha, Durbala* and *Garbhiṇi* are not considered suitable for the major *Saṅśodhana* procedures of *Pañcakarma* therapy. However, many procedures may be suitably tailored and modified to be administered in elderly persons to achieve desired results.

The *Pūrvakarmas* like *Dīpana, Pācana, Snehana* and *Swedana* can be easily administered. One can take a little precaution to minimise the dose of internal *Snehana*. External *Snehana* and *Abhyaṅga* massage are specially indicated in elderly patients. *Vamana* after 60 years of age ahould be administered with great precaution and after careful monitoring of the general health and accompanying diseases. *Vamana* should not be administered in an elderly person (or any other person) if he is suffering from hypertension, Ischaemic heart disease, Peptic ulcer, Cirrhosis of liver, Pulmonary Tuberculosis or any

major lung disease, intracranial tumour and glaucoma etc. *Virecana* specially of *Mṛdu* variety is best suited to the elderly patients, *Basti* is specially indicated. The practices of Keraliya Tradition such as *Dhārā Krama, Kāya Seka, Piṇḍa Sweda, Annalepa* and *Śirobasti* can be prescribed in elderly persons without any reservation.

Pañcakarma Therapy in the elderly has twofold objectives No : 1. as a therapy for rejuvenation to retard aging i.e. to ward off the effects of aging for healthy aging, No : 2. as an adjunct in the treatment of diseases of the elderly.

An apparently normal elderly person should undergo periodical *Pañcakarma* Therapy followed by *Rasāyana* inorder to promote his overall health and to avert the effect of aging viz., muscular weakness, muscle atrophy, wrinkling of skin, greying of hairs, loss of vision hearing and other senses, psychomotor control and coordination, memory and cognition etc. The individuals willing to undergo *Pañcakarma* for this purpose may be prescribed :

PART A :

1. *Dīpana, Pācana* for 5 days
2. *Snehana/Abhyaṅga* for 7 days
3. *Swedana/Sarvāṅga Swedana* by *Daśamūla Wāṣpa* for 7 days simultaneously after *Abhyaṅga* i.e. oil massage.
4. *Vamana* only in selected cases.
5. *Virecana/Mṛdu Virecana* on Two subsequent days.
6. *Basti* for 16 days - preferably *Anuvāśana* type depending upon the condition.
7. *Śirovirecana* 2-3 rounds.

PART B :

8. *Kāya Seka* and or *Piṇḍa Sweda* for one hour daily for 21 days.
9. *Śirobasti* with *Brāhmi Ghṛta* for 21 days.
10. *Śirodhārā* with *Medhya Kaṣāya* or any other liquid for 35 minutes daily for 21 days.

PART C :

Prescription of a suitable *Rasāyana* to be consumed for 3-6 months.

If an elderly person undergoes such a regimen once or twice a year regularly, the rate of his aging is retarded and the person remains physically fit and mentally alert till late in his life.

The common diseases of the elderly are benign enlargement of Prostate, Osteoarthritis, Hypertension and IHD, Diabetes, Chronic Bronchitis, Parkinson's disease, Alzhimers disease, Senile dementia, motor neuron disease, Cancer and dysfunction of sensory organs and locomotor system. Most of these problems are of degenerative nature and treatment has to be restorative, rejuvenative and rehabilitative.

The schedule framed above for the elderly can be used also for elderly individuals afflicted with the above mentioned diseases. This will be of multifaceted help in promotion of their overall health as well as in palliation of the associated diseases.

However, for specific care it has been observed that patients of benign enlargement of prostate and chronic urinary infections respond favourably to *Basti Therapy.* A simple course of *Nārāyaṇa Tail Basti* for 2-3 weeks and simultaneous administration of *Varuṇa Śigru Kwātha* for several months has been reported to reduce the size of the prostate restoring the flow of urine besides inhibition of the urinary infection and improvement of urinary bladder tone. How anorectal *Basti* influences the prostate and urinary bladder is not known. Presumably the syndrome with which a case of enlarged prostate presents to a physician is nothing but *Udārwarta Roga* as described in Ayurveda and *Udāwarta* being a *Vātal* disease its logical Ayurvedic treatment is *Basti Therapy.* Therefore all cases of benign enlargement of prostate and chronic UTI may be treated by few interrupted courses of *Basti* following appropriate *Pūrvakarma.*

Similarly the patients of Hypertension, IHD and Hyperlipidemia may be put on repeated interrupted courses of *Lekhan Basti.* A *Lekhana Basti* may be formulated by utilising suitable *Lekhana* drugs such as purified *Vacā, Guggulu, Puṣkaramūla* etc.

Diabetes is a *Saṁtarpaṇa janya* disease and is understood to be associated with altered immune function. Ayurvedic classics too associate loss of *Ojas* in *Prameha*. The biofire or *Agni* system is also depleted in this disease. Hence while managing Diabetes a physician must take into account the *Agni* and *Ojas* status of the patient. Further the *Āma* and *Meda* also play important role in the *Samprāpti* of *Prameha*. Hence a Physician should try on one hand to promote the *Agni* and *Ojas* while on the other he should try to reduce the *Āma* and *Meda* in his patient. In view of this fundamental consideration *Pañcakarma Therapy* seems to be an important tool in the managment. *Saṁśodhana* may purify the *Srotāṁsi* i.e. the channels which may have beneficial impact on the functioning of *Agni, Ojas, Āma* and *Medas*. Therefore it is advocated that a *Sthūla Pramehi* i.e. an obese diabetic should be subjected to full *Pañcakarma* Therapy including *Dīpana, Pācana*, preparatory *Snehana-Swedana, Vamana, Virecana, Basti* and *Śirovirecana*. The Kṛśa *Pramehi* i.e. the thin diabetic may not be suitable for *Saṁśodhana*.

The elderly patients afflicted with degenerative locomotor disorders like Osteo-arthritis and myopathies are to be treated with *Abhayaṅga* and *Sweda* in general. *Piṇḍa Sweda* and *Kāyaseka* produce good results. In simpler cases *Abhyaṅga* and *Nāḍisweda* with *Daśamūla Wāṣpa* for 2-3 weeks is beneficial. In case of single big joint involvements one can try local *Annalepa* therapy or *Nāḍisweda* following massage. All such patients must take simultaneous *Rasāyana* Therapy with necessary herbomineral supplements.

Motor Neuron Disease, Alzhimers disease and Parkinsons disease are common CNS degenerative diseases of the elderly for which there is nothing to offer in conventional modern medicine. Many of such patients opt for Ayurvedic treatment and *Pañcakarma* Therapy. The *Pañcakarma* Therapy Clinic at BHU Hospital treats these patients with *Piṇḍa Sweda* and or *Kāyaseka* with *Śirobasti* and *Śirodhārā* followed by *Rasāyana* Therapy for several weeks several times a year which yields perceptible effect in terms of improved locomotor ability, cognitive function and alertness. However results are not dramatic and improvement is not more than 20-25 percent.

Summary schedule for Pañcakarma in Geriatrics

Rejuvenative Treatt for Healthy Aging :	Abhyaṅga-Sweda. Piṇḍasweda/ Kāyaseka. Saṅśodhana : Vamana Virecana Basti	Śirobasti Śirodhārā	Rasāyana Therapy
For Associated Diseases in Elderly :			
Benign Enlargement of Prostate	Pūrvakarma, Basti 21 days Interrupted 3-4 times a year	Uttar Basti SOS	Varuṇaśigru Kaṣāya Śilājatu Rasāyana.
Hypertension, IHD Dyslipidemia	Lekhana Basti	Exercise, Diet control	Saṅśamana Treatment
Diabetes Mellitus	In obese Patients Full Pañca Karma for Sanśodhana	Exercise Diet control	Naimittika Rasāyana Śilājatu
Osteoarthritis	Abhyaṅga, Sweda Nāḍisweda	Piṇḍasweda, Annalepa Physio-therapy	Rasāyana
CNS Degenerative Diseases	Abhyaṅga, Sweda, *Piṇḍa*sweda Kāyaseka	Śirobasti Śirodhārā Physiotherapy	Rasāyana
Cancer	Abhyaṅga, Piṇḍasweda Kāyaseka	Śirobasti Śirodhārā	Rasāyana

ṢAṬKARMAS OF THE HAṬHAYOGA TRADITION

As mentioned earlier the *Pañcakarma* measures of Āyurveda have been developed as the methods of bodily purification. Based on the same principles the *Ṣaṭkarma* procedures were developed in *Haṭhayoga* traditions. It is conceived that the internal purity of the body specially the purity of the *Nāḍi Saṁsthāna* is the essential pre-requisite for other vital practices of Yoga specially the practice of *Prāṇāyāma*. It is with this context that the *Ṣaṭkarma* procedures were introduced in yoga tradition. *Haṭhayoga Pradīpikā* considers these *Ṣaṭkarmas* as six purificatory promotive measures *'Ṣaṭsodhanakāraka'* and *'Vicitraguṇa Samsthāpaka'*.

As rightly emphasised by Pathak (1979) in his book on Yogic exercise Āyurveda and Yoga are closely allied disciplines. The *Haṭhayoga* has derived a lot for its foundations from the positive health doctrines of Āyurveda. It is the Ayurvedic classics which identified the essential relationship between internal purification of the body and preservation of health, and it is with the background that the Fivefold purificatory therapy i.e. the *Pañcakarma* was introduced. At a later stage the *Yougika Ṣaṭkarma* were developed in *Haṭhayoga* as important *Yougika* purificatory measures which have been rightly considered as methods of Yoga Hygiene by Shri Yogendra. It may be pointed out that the *Pañca Mahākarmas* of Āyurveda were designed for application in patients and the patients being physically weak, Āyurveda developed necessary instrumentation and drugging for *Pañca Karma* Therapy. And as such *Panca Karma* of Āyurveda involves lot of tools and materials. In contrast the *Ṣaṭkarmas* of Yoga school are designed for the practice of healthy persons for promotive and preventive care and the healthy aspirant in the latter case does not need so much instrumentation and drugging. Here the individual develops his natural ability and by his own bodily ability he is able to perform various purificatory actions leading to the purification of different systems in the body. He has not to use any instrument or drug for this purpose. In place of instruments he uses the bodily mechanics and replaces drugs by naturally available materials like water etc. Ordinarily in Āyurveda one applies the *Basti* Apparatus for instituting *Basti Karma* while

in such practices in *Haṭha Yoya* the practitioner takes the help of the skill of the muscle power of the region to handle the vital parts without any external appliance.

Conventionally the following six purificatory measures are enlisted under *Ṣaṭkarma* in *Haṭhayoga.*

1. Naulī
2. Dhautī
3. Vasti
4. Neti
5. Kapāl Bhāti
6. Trāṭaka

NAULI

Nauli Kriyā has been considered the best among the *Ṣaṭkarmas (Haṭhakriyā Mouli). Naulī* besides its own merits is also the basis of the great purificatory measure, *Basti Kriyā. Basti* cannot be practised without the ability of practising *Naulī.* The popular *Vajroulī* practice also depends on *Naulī.* Essentially *Naulī* is an exercise of the abdominal muscles. It consists of voluntary contraction of the Rectus abdominis muscles and using the contracted recti for massaging the abdominal contents. Thus it is not only the exercise of the anterior abdominal wall but is also an effective method of active auto-massage of the abdominal viscera.

Contra-Indications of Naulī

Naulī can be practised by any body who is in normal health but from practical point of view the following conditions are contraindicated; (1) Beyond the age of forty years it should be practised only under medical supervision, (2) Those who are suffering from Intestinal Tuberculosis, (3) Those suffering from chronic appendicitis, (4) Those suffering from any other similar intra-abdominal markedly inflammatory conditions, etc. (5) The patients of Hypertension, (6) Children below the age of 14 years.

The Technique

Naulī is practised in the state of *Uḍḍiyāna Bandha.* Hence one should attain perfection in the practice of *Uḍḍiyāna* before

starting the practice of *Naulī*. *Uḍḍiyāna* consists of retracting the anterior abdominal wall to the extreme back pressing all the viscera back. It is in this state that the individual attempts to move the contracted recti muscles, the same is *Naulī*. Hence the perfection in the practice of *Uḍḍiyāna* is the essential pre-requisite for the practice of *Naulī*.

Naulī can be practised both in sitting as well as in standing position. Ordinarily if one is practising only *Naulī* he may practise it in standing position and if he is adding *Naulī* to *Basti* he should do it in squatting position. However, one should begin to practice in standing position and after he has perfected the practice in standing position he may start doing it in sitting posture. 'The best standing position for the practice of *Naulī* is to keep the two legs at a distance of about 1-1½ feet or any other distance which may be comfortable to the practitioner. The ankles should be kept rotated outwards and the knees be kept slightly flexed. The palm or the hands should be placed over the thighs on respective sides diverting the weight of the trunk of the body over the thighs through the hands, the neck and the shoulder being carefully straightened. Now the air should be fully expelled out through the nose. The abdominal muscles should be relaxed by flexing the neck and the aspirant operates process of inspiration without allowing the breath to get in. This will permit the abdominal muscles to retract and stuck back to the costal margins. This is the first stage of the practice of *Naulī* and the same is *Uḍḍiyāna*.

Now in the stage of *Uḍḍiyāna Bandha* he should create a front-downwards pressure over the abdomen just above the pubic region which is the site of origin of Rectus. abdominis muscles. By straining this site the Recti muscles start contracting, all other muscles in the vicinity remaining relaxed. A continued careful practice as per method described above the Recti start contracting voluntarily forming a hard elongated bundle occupying the central abdominal wall throughout the length from public area upto the central costal margin. Such a practice of contracting, recti in their central site is called *Madhyamā Naulī*. Here one must keep in mind that if he is not careful in focussing; point of strain on the correct site, he will fail to contract solitarily the Recti and all the muscles of the abdominal wall will contract and thus there will be no *Naulī Siddhi*. Hence putting strain

specifically at the site of origin of Recti muscles i.e. over the pubic region is important. The aspirant achieves this ability by repeated practice. The characteristic features of *Naulī Siddhi* are-(1) Clear prominent contraction of the Recti forming an elongated muscular *Daṇḍa* extending from the pubic region upto the costal margin (2) Quick formation of *Naulī Daṇḍa* by little effort, (3) Absence of any kind of pain or discomfort during *Naulī*. In case the aspirant starts getting pain during *Naulī* he should immediately stop the practice and should not restart the same unless he is medically assessed and found fit.

Once the aspirant has perfected the practice of *Madhyamā Naulī* he should proceed to the third stage of *Naulī Kriyā*. i.e. the *Bāma* and *Dakṣiṇa Naulī* i.e. Left and Right *Naulī*. This is the practice of voluntary contraction of the Right or the left Rectus abdominis muscles individually keeping one of these fully relaxed. In this case the practitioner contracts one Rectus muscle and fixes it to the extreme of that particular side. For this he bends his one side of the body more forwards and keeping the other side relatively straight. Then he should slightly bend the trunk towards the same side and try to strain. By this the Rectus of that side will emerge out and the other one will remain relaxed. The aspirant should pay full attention to his efforts, if he is not attentive he may not succeed.

After perfecting the Central, Left and Right *Naulī*, the practitioner may proceed to practise the *Pūrṇa Naulī* or *Naulī Cālana* i.e. free voluntary mobilization of the *Naulī* over the abdomen. In this the practitioner moves the *Naulī Daṇḍa* from left to right and from right to the left and further does the circular movement of the *Naulī Daṇḍa* over the abdomen producing an active massage of the abdominal contents.

The practitioner should practise *Naulī Cālana* 7-21 rounds one round meaning as many *Naulī Cālanas* in one breath. *Nauli* practice is the best exercise of the muscles of abdominal wall and it produces efficient massage of the intra-abdominal viscera effecting improved blood circulation. This specially improves the gastro-intestinal functions and relieves the digestive disorders. This removes abdominal fat and relieves enlargement of the belly. It also improves the gynaecological diseases including menstrual disorders and promotes the function of reproductive

organs. It strengthens the muscles of genital organs in males. This is why Gheranḍa Saṃhitā considers it *S⁎va Rogahara-'Sarvarogannihantiḥ'.*

DHAUTI KRIYĀ

Dhautī is essentially a *Haṭha Yogic* practice of cleansing the stomach either by ingesting a cloth or by warm saline lavage. Two commonly practised methods of *Dhautī* are - (1) *Vastra dhautī* (2) Jala *dhauti* or *Ḍanḍa dhautī.*

In *Vastradhautī* one has to ingest a smooth wet and sterile cloth piece of 2½" x 21" size gradually through the mouth. After the whole length of the cloth is ingested the practitioner performs *Naulī* and *Naulī Cālana* with the *dhautī* inside his stomach. Within ten minutes of ingestion of the cloth he should finish the whole process including the *postdhautī Naulī* and should slowly take out the *Vastra* i.e. the cloth strip ingested. When this cloth piece comes out it brings out with it a lot of excretable material such as mucus etc. from the upper gastro-intestinal tract and thus purifies the system internally. *Vastra dhautī* should be practised in standing position in a relaxed mood slowly and systematically so that the cloth does not get intermingled and does not form knots and or does not stuck to the stomach wall. It should also not pass into the narrower areas of the pylorus because in all such situations the practitioner may feel difficulty specially while taking it out. It may be pointed out that if the cloth is left inside the abdomen more than ten mînutes it starts setting with the wall of the stomach and in that case its removal becomes difficult. In any case of difficulty during removal of the *Vastra dhautī,* one should drink a glass of water to loosen the cloth and then he should remove the same.

Ḍanḍa Dhautī is the process of drinking enough luke warm saline water orally followed by putting in a *Ḍanḍa* or stomach tube to remove the total quantity of water drunk through the tube forming a siphon system. This is a method of direct physical washing of the upper G. I. Tract with water. This practice keeps the stomach clean and prevents the diseases of upper gastro-intestinal tract. It is called *Danḍa Dhautī* because in good old days different kinds of *Ḍanḍas* or tubular structures such as the piece of the petiole of banana leaf etc. were used to remove the water from the stomach.

Dhautī can be practised on the principles of *Vamana* i.e. emesis too. For this the practitioner drinks adequate amount of water followed by induction of vomiting through a suitable method. In this case, one need not introduce a *Daṇḍa* or tube for this purpose.

All these methods of *Dhautī* primarily lavage the upper gastro-intestinal tract. But through reflex actions these practices also produce changes in the entire G. I. tract and its appendages including the liver, gallbladder, pancreas and the spleen. This should be practised once a week on empty stomach in the morning. *Dhautī* affords all benefits of the *Vamana Karma* described in classical *Pañca Karma* Therapy and involves relatively less risk and side effects. Shri Yogendra describes many benefits of *Vamana dhautī* and considers it as one of the principal Yoga-hygiene methods.

Thus *Dhauti Kriyā* is essentially used for purification of gastro-intestinal tract. Besides, one should also practise purificatory measures for other parts of the body. Shri Yogendra advocates the following schedule of practices for this purpose :

S. No. Part to be Cleaned	Yogic Method	Rounds	Time
1. Teeth and oral cavity	*Danta Dhauti*	Morning and Evening	5 minutes
2. Tongue	*Jihwā Mūla Śodhana*	Morning and Evening	1 minute
3. Ear :			
External ear	*Karṇa Dhauti*	Once a week in the morning	1 minute
Internal ear	*Karṇa Randhra Dhauti*	-do-	1 minute
4. Sinuses	*Vāta Krama, Kapālabhāti*	Morning and Evening	2 minutes
5. Frontal Sinuses	*Kapāla Randhra Dhauti*	-do-	1 rninute

BASTI KARMA :

Basti is the process of cleaning the intestines. The intestines are cleaned also by certain drugs and enemata. The

Basti Karma of Haṭha Yoga tradition is of two kinds (1) *Pavana Basti,* (2) *Jala Basti. Pavana Basti* is the practice of pulling *Apāna Vāyu* upwards by *Naulī Karma* and its mobilisation. *Jala Basti* is the practice of pulling water through rectum. *Jala Basti* becomes easy for a person who has mastered over the technique of *Pavana Basti* because the practitioner pulls up water only by pressure of air. For the practice of *Jala Basti,* a rubber tube of 6 *Aṅgula* length with inner space equal to the size of one little finger is used. This tube is introduced in the rectum upto four fingers height after adequate oleation. Only two finger length of the tube should remain outside the anus. Now the practitioner sits in a tub of water in squatting position in such a way that the level of water ascends upto the navel. Now he should start the *Kriyā* by *Pavana Basti* technique; this will be automatically followed by ascent of water in the large bowel through anal passage tube. Now he should practise *Nauli* along with water in the gut. After *Nauli* the water should be allowed to flow out by releasing air pressures. The procedure of cleansing the intestines by this method is called *Jala Basti.* In order to push out the water completely, he should perform standing *Paścimottānāsana. Basti* easily expels faeces, *Āma,* worms and gut poisons. It relieves *Gulma, Plihā, Jalodara, Agnimāndya* etc. It is advisable to purify the upper G. I. Tract and Respiratory tract with the help of *Netī* and *Dhautī* Karma before practising *Basti. Basti Karma* is contraindicated in *Saṅgrahaṇi, Pitta Vikāra, Bhagandara, Arśa, Yakṣmā, Malāśaya Śotha, Guda Śotha, Jvara, Āntra vraṇa Sotha* and *Tamaka Śwāsa.*

NETI KARMA :

Neti Karma is the process of cleansing the nasal and upper respiratory tract. It is of two kinds : (1) *Jala Neti* and (2) *Sūtra Neti.* To begin with first one should practise *Jala Neti.* One should practise *Jala Neti* in the morning after cleaning the mouth and teeth etc. He should take water on the palm of the hand and should suck the water through one nostril and should pour out the same through the opposite nostril. In one sitting one can suck and release 1/2-1 litre water. This is called *Jala Neti.* Now ready-made *Neti* pots with specially designed nozzles are used for *Jala Neti.* The nozzle is such that it fits in the nose and helps in pouring water in one nose to be released through the other. It is preferred to use slightly warm saline water for *Neti.* This

promotes the eye sight and vision. *Jala Neti* is contraindicated in severe eye disease, hyperchlorhydria and fever. *Jala Neti* can be practised daily. After having mastered over *Jala Neti*, one may proceed to practise *Sūtra Neti*. *Sūtra Neti* should not be practised every day. It should be practiced once or twice a week. For *Sūtra Neti* ordinarily a thread or a thin rubber catheter is used for cleansing process. The rubber catheter or the thread is put in one nostril, the other nostril is closed and attempt is made to breath forcefully upwards; by doing so the rubber catheter thread put in one of the nostrils is automatically thrown into the throat. Now the catheter/thread is pulled out from the throat catheter should be caught in two hands and should be moved on two sides to rub the passage. This is also called *Gharṣaṇa Neti*. This process should be repeated through the two nostrils alternatively. This eliminates the entire debris and mucus of the nose and upper respiratory tract. This cleans the skull and intesifies vision.

It relieves all diseases of head and neck. It is very useful in cases of respiratory allergy and asthma. *Neti* is contraindicated in cases of acute rhinitis, burning sensation and redness of eyes.

KAPĀLA BHĀTĪ

Kapāla Bhātī consists of a stable practice of *Prāṇāyāma* through the order of *Recaka-Pūraka* performed forcibly and rapidly simulating the *Bhastra Yantra* of a blacksmith. As such it is a specialized breathing procedure. It is a special *Kapha Doṣa hara* process. This practice dries up the *Kapha* stagnated in lungs and bronchi and permits remaining *Kapha* to be excreted through perspiration. This practice renders the lungs stronger. It also strengthens the nervous system and digestive system. The digestive capacity is increased. *Kapāla Bhāti* is contraindicated in *Urakṣat,* weakness of heart, vomiting, nausea, hoarseness of voice, delusion, vertigo, pyrexia, insomnia, bleeding disorders, hyperchlorhydria etc. It should also not be used during the rainy season and during journey.

TRĀṬAKA :

Trāṭaka Karma is the practice when a person starts constantly gazing on a given minute object with full attention till tears start flowing. This is an effective method of internal cleansing of eyes. It relieves eye diseases, laziness etc.

THE NATURE CURE PRACTICES

The principles of Nature Cure are similar to Āyurveda. As a matter of fact Nature Cure is a branch of Āyurveda, the ancient science of life. The Nature Cure system puts special emphasis on the values of Nature. Adolf Just a pioneer in Naturopathy states 'that more and more one is in nearness of Nature, more and more healthy he is. On the contrary, the more one withdraws from the Nature, the greater he looses his health. The Almighty created the Man in total health with exemplary good conduct. The man was absolutely pure and healthy from all points of view, physical, mental and spiritual. Had the Man continued to respect the Nature and had he continued to live the natural life, he would have enjoyed healthy and heavenly life on this earth. But it did not happen so, and the man continuously withdrew himself from the Nature in the search of artificial comforts and conveniences. This lead him to be imprisoned into his own knitted net of artificial life with innumerable health hazards for which he had to develop a sophisticated medical science of today to rescue him. The modern medical science has no doubt done a good service to man but because its view points are contradictory to Nature, the modern medical science is not the right answer to the ill health and unhappiness of man.

The object of Naturopathy is to re-direct the sick man towards the Nature so that he may be truly cured. Nature Cure consists of the procedures of bringing the sick man nearer to the Nature rendering him physically and mentally pure and healthy. Naturopathy believes that due to weakness of digestive capacity a variety of unwanted and incompatible products accumulate in the body and when such products, override a limit and spread in the system, it leads to different kinds of diseases. Naturopathy intends to eliminate such accumulated unwanted and incompatible products from the body and to prevent their reaccumulation. This is the fundamental principle of Naturopathy. Thus it is very much similar to *Pañca Karma* Therapy of Āyurveda.

Nature Cure essentially depends on diet and natural living, it does not prescribe drugs. In contrast, the western modern medicine manages the problems of ill health by use of drugs and

surgical interventions, while Āyurveda utilises both i.e. the nature cure procedures as well as the drugs. Āyurveda and Naturopathy have many similarities. Āyurveda, advocates to purify the body by *Pañca Karma* procedures and then to palliate the disease state with the help of appropriate diet and drugs.

From historical point of view Vincent Precinis (1852) of Austria was the first person who used natural means of healing in place of other medicinal treatment procedures. Subsequently the Czech physician Johans Sroth popularised these principles. In 1874 the German physician Luis Kuhane specially emphasised the importance of water therapy. Another German physician Heneric Lehman laid emphasis on diet therapy and established its scientific basis and recognised diet as the main principle of treatment in medicine.

The basic approach of Nature Cure will be easier to understand by summarising the expressions of Adolf Just in his book "Return to Nature" in following paragraphs.

The creator had created Man in total health and purity of conduct. There was neither a trace of impurity in the body nor in the soul. Man was enjoying heavenly life free from all evils. Today nobody on this earth is healthy. The entire earth is in the grip of unhappiness and disease. The man is surrounded by a variety of diseases starting from his birth till death. The feeling of friendship and brotherhood has ceased from this planet. Hatred, jealousy and crime are prevalent all over. Today there is hardly a person who is free from anxiety, sorrow, grief, disgust and depression. Why the Man fell in such a misery; because of ignoring the Nature and because of falling into the illusion of science. The mother Nature is ready even today to show us the easy path of natural health.

Today the Man has become the victim of innumerable diseases mostly because he has ignored the directions of the Nature. The wild animals and the sky life birds have always remained in nature, hence they have remained free from diseases and are also not afflicted with evils of hatred and crime.

Today hardly there is any place in the nature which has remained safe from the destructive hands of man. It is because of the increasing encroachment of man over the Nature that signs of disease are now obvious even in plants and animals. However

the miseries of plants and animals are much less as compared to the miserable life of man. It has been observed that the birds and animals living in the nature are always free from disease. But when the same creatures are withdrawn from the nature they loose contact with natural air, light, water and soil and they also fail to get that natural food which nature has produced specially for them. This exposes them to disease and disorders of health.

If we observe the Nature with open mind ignoring the rigidness of the present day science, we can easily perceive that the fundamental cause of our suffering and ill health is our not attending to the inspirations of nature. The nature has its own law; it definitely penalises the breakers of the law of nature. The nature also rewards those who observe its laws.

Naturopathy believes that the man has an inherent right to overcome a disease, no matter how severe and complicated it is. The only way is to sincerely surrender to the nature. He should try his best to follow the nature. He should eat only that food which the mother Nature has created specially for him. He should keep in natural touch with water, air, space, earth and light. The order of Nature is very plain and simple; all men and animals can easily understand. It is always better to learn directly from the Nature rather than learning from man about the nature. The teachings of Nature are unique. These may not be found in books nor these can be discussed in closed door rooms. The Nature explains every thing to man by way of direct perception keeping his wisdom alert. We know that all tribal people living in forests and hills follow the natural rules of keeping healthy. Without any external education they are able to recognise different kinds of poisonous plants and fruits and do not eat them because their senses are very sharp and natural.

Obviously the original man was provided intellect and thinking power to enable him to rise higher and higher to develop communiun with the Supreme. But the man opted the reverse direction and used his intellect to take him more and more independent of the Nature. The man stopped listening to the Nature and started posing himself as his master and started depending more on his logic and analytical thinking. He formulated his own laws of life and living. From here starts the modern culture. Such a misuse of human intellect led to the

development of modern science, which brought some comforts for man but also brought innumerable discomforts and hazards for him. Inspite of this, in the present era, Science is being worshipped every where instead of the Godess mother Nature. However the life and health potentials of the Nature are not yet forgotten. More the man has adopted to the so called scientific and artificial means of preservation of health, more and more sickness has afflicted him. The only way to preserve man in healthy and happy state is to redirect him to Nature. He should arouse his senses to become so sensitive that he may catch the instructions of Nature for reality and happy living. Nature will never deceive man as the Science has been doing.

WATER THERAPY

Water is an important commodity in Naturopathy. As stated earlier different diseases develop because of the vitiation of the body and the blood leading to stagnation of incompatible products and growth of pathogens in the system. The cure can be achieved only by removal of such unwanted materials from the body. This postulate is universally accepted. All systems of medicine accept it in principles, though they differ in their approaches. Western modern medicine uses a variety of chemical drugs to eliminate the above said stagnated incompatible products and pathogenic organisms; these drugs and chemicals used for this purpose themselves are incompatible and unacceptable to the body, and hence they are potentially harmful and are likely to produce independent disease states. In contrast in Naturopathy one uses natural procedures for eliminating the unwanted products and pathogens without using chemicals and drugs. In this context water therapy is most important. This is why, water therapy is considered the basic and the primary Nature Cure procedure.

As a matter of fact during initial stages water therapy alone was understood as Naturopathy. From historical point of view, it was only water therapy which was established first as treatment procedure in Naturopathy which was subsequently followed by broader and comprehensive Nature Cure System.

Historically water therapy and subsequently Naturopathy were established for the first time by Vincent Prisnis a rural

farmer. He is considered the father of modern Naturopathy. Adolf Just also emphasised importance of natural bath. In his book "Towards Natural Living" he suggests that only that method of bath is correct which simulates the natural bath of birds and animals as seen in the nature. It is often seen that most of the animals and birds do not like to take bath simply by wetting the whole body in water but by rolling in mud and soil to rub the body. This process helps them to keep healthy.

USE OF HOT AND COLD WATER

Water is the principal means of nature cure. Water is used both in cold and hot form both internally and externally. Water is used in different methods of bath and drinking. In principles water therapy is carried out in consideration of the strength of the patient and his body temperature. Water therapy, besides medicated water drinks, consists of a variety of baths like steam bath, hip bath, hot and cold bath, whole body hot bath, sitz bath, sun bath, and mud bath etc. The hot water bath provides warmth to the body which in turn causes vasodilatation leading to accelerated blood circulation in the body. This promotes the vitality of the body and all activities in the body become active and vitalised. In order to make this vitality stable, brisk cold bath is given. Rapid, intermittent and alternate hot and cold bath induces rapid intermittent alternate vasodilatation and vasoconstrition. This promotes the vitality and elasticity of blood vessels and keep them free from unwanted stiffness and sclerosis. Simultaneously this procedure also eliminates the unwanted products from the body. And the metabolic activities of the body become more lively.

For treatment of fever ordinarily one should apply water wet cloth or wet mud embedded cloth over the lower abdomen and wet cloth around the neck keeping the whole body covered. Simultaneously hip bath is also given. This lowers the temperature. If this does not work, the whole body should be covered with wet cloth of course avoiding exposure to wind. In physically fit patients steam bath is also used to relieve fever. This induces diaphoresis and lowers the temperature. In physically weak patients cold sponging is advocated. A normal person is also advised to rub his body by cold water-wet piece of cloth in order to provide freshness. Similarly hot water bath helps

in eliminating the stagnated unwanted products from the body through sweat, urine and faeces. This makes the internal environment of body clean. Warm water bath is specially indicated in cases of *Vāta Vyādhi,* Cold, Asthma etc.

OTHER METHODS OF WATER THERAPY

We have already discussed the fundamental principles of water therapy. Now we describe some simple and useful procedures of water therapy for common use.

FOOT BATH-Foot bath is a common useful practice. Traditionally in Indian society it is a common practice to wash the feet before sitting for dining. It is believed that by washing the feet with cold water the warmth of the body ascends upwards to augment the digestive fire of the stomach leading to better appetite and improved digestion. Besides, Naturopaths advocate foot bath for promotion of health in general. For this a wide mouth pot is taken. Water is poured in this pot as much as may be enough to dip the feet upto ankles. Then one should stand for few minutes in this pot within water upto ankles. Then he should come out, dry the feet by rubbing forcibly with a towel and then should take brisk walk for few minutes. This procedure should be repeated 2-3 times. This is called Foot Bath.

CALF BATH-Calf bath is practised in the same way as the foot bath keeping the water level upto the calf. The procedure should be repeated 2-3 times in the same way as described above. This procedure, besides several systemic effects, relieves pain of calf muscles and promotes blood circulation in legs.

SPINAL BATH-For this one needs a special tub of 6' x 3' x 3'. Water should be filled in this tub and the patient should be asked to lie down naked in the tub for 15 minutes after which he should come out, dry the body by rubbing with a towel followed by some light exercise.

HIP BATH-For this a suitable tub is procured. It is filled with water of normal temperature. The patient is seated in the tub in such a way that his body is covered with water upto the navel, and the legs are placed on a stool out side the tub. If the patient is very weak the legs should be placed in lukewarm water. While sitting in the tub one should rub the part of the body under water with a towel from one side to the other side. Intermittently hands

should also be moved around the genital region. One should take hip bath every day 5-7 minutes. If the water is very cold, the duration of bath should be reduced or a little warm water should be added. After bath the body should be dried with the help of a towel and clothes should be put on and then the patient should lie down on the bed and get covered with a blanket in order to restore warmth. Hip bath is beneficial in the treatment of constipation, indigestion, diabetes, hernia, intestinal tuberculosis, and the diseases of urogenital system.

SITZ BATH-For this a suitable device may be developed to give a cold bath to the genital organs 10-30 minutes in one sitting. This helps in sexual neurosis and other problems of genital system besides its other systemic attributes.

APPLICATION OF WATER BANDAGE

When bath is contraindicated, one should administer water therapy by applying local water bandages. Usually the bandages are prepared by *khādī* cloth, Falalena, or Woolen cloth so that enough water may remain in cloth, when made wet. Ordinarily the cloth piece is made wet in water of normal temperature and after straining, the same is applied on the body. If the whole body is to be given bandage bath, it is advisable to take a bandage of 18" x 48" size, to make it wet in water and cover the whole body with the same. Simultaneously another bandage of 15" x 18" size is wrapped around the chest. During this procedure exposure to open air should be avoided. The wet bandages are removed after 2-3 minutes and the body is cleaned with dry towel, and the body is covered with dry cover sheet.

In certain conditions warm water bandages are also applied. In cases of abdominal diseases, abdominal colics, inflammations, stiffness etc. one should apply hot and cold bandages alternatively. In case of pain in a particular part of the body one should apply warm saline water bandage. Similarly one should try different kinds of water bandages in different conditions.

STEAM BATH

Steam Bath is a popular therapeutic procedure in Naturopathy. Ayurveda also considers *Swedana* (Sudation) as

an important therapeutic procedure. Caraka Saṃhitā, in its Sūtra Sthāna chapter 14 describes *Swedana* as the principal *Pūrvakarma* i.e. preparatory procedure for *Pañca Karma* Therapy. *Swedana* is of two types viz., (1) *Sāgni* (with fire), (2) *Niragni* (without fire). Different specific procedures have been described for administration of these two major types of *Swedana.* Suśruta described four kinds of *Sweda* (application of heat) viz., (1) *Tāpa Sweda* (application of fire), (2) *Ūṣma Sweda* (application of heat), (3) *Upanāha Sweda* (application of hot paste), (4) *Drava Sweda* (application of hot liquids).

The objective of steam bath used by naturopaths and that of the different kinds of *Swedana* therapy advocated in Āyurveda, is to liquify the stagnated unwanted products of the body and to remove the same out of the body along with perspiration. This purifies the body and promotes the vitality of the body by accelerating the blood circulation.

METHOD OF STEAM BATH

There are several methods of steam bath. Ordinarily water is boiled in a container. The patient is made to sit naked on a knitted easy chair or cot. He is covered with a thick cover sheet or a blanket. Now the steam of the boiling water is allowed to enter into the cover sheet on the body of the patient. Care is taken to see that steam does not flow directly on the body of the patient to avoid steam burn. The steam bath is continued till the patient has good perspiration depending upon the condition of the patient. Ordinarily 5-15 minutes time is enough. After this the patient is taken out, is given water bath of normal temperature and is asked to lie down on a separate bed and is covered with a blanket. During the entire procedure direct exposure to wind is avoided.

In addition to the above general procedure of steam bath, sometimes special devices are used for this purpose. A steam bath box of 6 x 3 x 3 Feet is used in which the patient lies down naked keeping his head outside the box. Steam is poured in this box from one end on known temperature and humidity constantly recorded on a thermometer and hydrometer fixed in the box.

Nāḍi Sweda procedure is another method which is often used for local steam bath. In this the water is boiled in a container

attached to a tube through which the steam flows to a desired site. This tube-carried steam may be used both for local or whole body fomentation.

Steam bath purifies the body. The incompatible stagnated products of the body get liquified and go out of the body with sweat. This provides the body a clean and healthy internal atmosphere which prevents illness. Therefore even a healthy person should take steam bath time to time. Besides, the steam bath relieves stiffness of the body. It helps in cases of arthritis, paralysis, sciatica and obesity etc. However steam bath is contraindicated in extremely weak persons and patients of heart disease, psychosis, epilepsy and tuberculosis. Āyurveda advocates that the degree and duration of *Swedana* is determined in consideration of the disease, the strength of the patient and the season and similar other factors (Caraka Sutra 14:5-6).

Āyurveda also advocates to avoid *swedana* on eyes, heart, head, and the scrotum (Caraka Sūtra 14:9). Appropriate methods have been described for protecting these organs. There are detailed descriptions of the signs of adequate fomentaion (Caraka Sūtra 14:12), excessive fomentation (Caraka Sūtra 14:13) and inadequate fomentation (Caraka Sūtra 14 : 15-18). Caraka also described in detail the indications and contra-indications of *Swedana* (Caraka Sūtra 14 : 19-23). The readers are advised to refer to the Chapter on *Swedana* elsewhere in this monograph.

MUD THERAPY

Mud is another important therapeutic principle in Naturopathy. It is believed that the human body is made up of earth. Hence earth is associated with all pains and pleasures of this earthen body. This is why after death the mortal body is surrendered to the earth in the form of burnt body ash or by burrying the same in the earth, The Naturopaths know that the mud possesses strong ability to eliminate harmful factors from the body. It heals the wounds quickly and relieves inflammation, pain and fever and provides strength to the body. Before we proceed to discuss the therapeutic uses of mud, let us discuss the scope of vital energy which can be attained by earth-living and related naturopathic hygiene.

IMPORTANCE OF EARTH-LIVING AND NATURAL TENDENCIES

It is a well known fact that the fish is a water living animal. It cannot live without water. Likewise the birds live in the sky. Similarly the Man is born to live on the earth. The earth is our mother creator. From antiquity the Man has been constantly in direct contact with the earth always while walking, sitting, sleeping or keeping awake. But today the Science and modernity have been constantly making conspiracy to separate us from the earth and its environment. Now we do not walk directly on the earth, rather we separate ourself from the earth by putting on socks and shoes in our legs. We do not sleep on the earth, rather sleep on cots and matresses. We do not live on natural open earth as we have started living in artificial multi-floor buildings. All these advances are unnatural and they are constantly keeping us away from the direct contact of nature, the earth and as such we are getting deprived of the immense source of natural vital energy available from the earth.

Nature intends that the man and the earth should remain and should continue to remain in uninterrupted contact. It is well known that walking naked foot on the earth is much more pleasant and healthful than walking on floors of rooms, roofs and panels. The man and animals while walking or lying on earth derive energy from the earth in the same way as plants absorb their nutrition from the soil. It has been experienced that one gets tremendous vitality and healthy feeling while lying on the earth without bed. The cots and beds deprive us of natural feelings of energy and pleasure. Sleeping on earth leads to good sleep and better digestion. According to Adolf Just there is no better remedy for correcting digestion of food than sleeping on earth. Sleeping on earth in the night is still more beneficial. In the night tremendous earthly energy enters in our body. Many Naturopaths advise the patients of insomnia to sleep on the earth. Adolf Just has emphasised the following two practices for good health.

1. Walking on the earth with naked foot.
2. Lying down and sleeping on the earth.

It is an inherent natural tendency to walk naked foot, to lie down directly on the floor and to keep direct contact with the earth to the maximum. It is well known that all animals and birds when

sit or sleep on the earth they prefer to remove all leaves and woods and try to be in direct contact of the earth. There is a need of giving serious thought as from where these animals get this inspiration. They behave in this manner because they feel that they get energy from the earth which pours vitality in their body.

The tribal man in ancient times also used to live a similar natural life and kept healthy and happy. But gradually Science and Technology emerged on this earth and the Man's grip on nature started getting shattered. The man stopped walking on the earth naked foot and left sleeping on the ground. He started wearing shoes and began to sleep on cots. Thus man lost his direct contact from earth and the result is before us. The man now is searching the solution of these results in hospitals and dispensaries. In this search how much success and how much failure has reached our hands is a subject of evaluation. However, one thing is accepted by all that earliest we return to Nature, best it is for our life, health and happiness. But return to nature has also not remained easy. We are cut off from the nature for centuries and generations. Now we have forgotten the laws of nature. However, even then if the man decides to take a turn to nature, it is sure that nature will not hesitate to receive him with the same love and affection. Hence let us at least start gradually to walk naked foot and to sleep on the ground. Rest will follow.

THERAPEUTIC USES OF MUD

In practice of Naturopathy a number of therapeutic uses of mud are prevalent such as application of mud paste, mud bath, mud bandage etc. Mud is the best medicament for all kinds of wounds and skin diseases. Application of mud on a wound relieves its pain, inflammation and burning sensation and the wound heals rapidly. The natural mud paste has many useful attributes. It is advisable to apply quick mud bandage using wet clay or mud from a river or pond in case of any kind of cut, puncture, burn, wound, abscess, boil, animal bite, depigmentation of skin, eczema, injury, sprain or fracture. This will always bring relief. Naturopaths believe that there is not much danger of infection through the mud used in dressing of wounds. However, one would always use clean mud for this purpose. It is postulated that the clay has solvent and absorbant property, it dissolves and absorbs the unwanted incompatible components

from the wound. Mud is a definite treatment of pain, because mud effectively absorbs the materials responsible for causing pain. Application of mud paste on the neck effectively relieves headache.

Besides the mud bandage of wounds, another common mud therapy is the application of mud paste or mud bandage on the pubic region or lower abdomen as a general health promoting practice. Mud poultice is used by all naturopaths. Mud poultice means to apply mud on a given part of the body with the help of a piece of woolen or cotton cloth. It does not need any special technique. The mud paste absorbs the heat and absorbs the excretable unwanted products from the tissues irrespective of the fact whether the pathology is superficial or deep-seated. All diseases arise due to gastrointestinal upset. Hence application of mud paste on abdomen is beneficial in all kinds of ailments. Application of mud bandage over the abdomen quickly relieves fever. It also helps in neurasthenia, anxiety neurosis and similar other systemic disorders. The mud bandage is applied on the lower abdomen and is left as such for hours. When the bandage becomes warm, it is changed. Some times it is also advised to take sun bath by lying down in sun with mud applied all over the body. This is a good method of sun bath without skin burn due to direct sun bath. Sometimes the entire body is burried in the earth keeping only the head out. This allows direct transfer of vital energy from earth to human body.

The mud poultice is used always in cold condition. Mud heated by artificial means is not advocated. This procedure spoils the natural energy of the mud. Mud is the most powerful medicament of the nature and it should be popularised for the therapeutic utility as much as possible.

PURIFICATION OF MUD

Only the mud, available in natural form, is efficacious in mud therapy. There is no need of any artificial method of mud purification. However, it is advisable to procure mud from a clean site. The mud available in an area is good for the men living there. The smooth mud is considered good for therapy as it sticks well on the part to be treated and it also produces desired effect. Hence it is advisable to use only the smooth mud. A mud once

used should not be re-used. Before using the mud should be cleaned by removing harmful constituents. The mud should be clean, fine and smooth. It should not remain mixed with unwanted things like cow dung, grass, thorns, stone pieces etc.

METHOD OF USE

The mud should be made suitably wet and should be spread on a piece of cloth and covered by another piece of cloth. The mud containing cloth fold should be applied on the part of the body to be treated and then suitably tied. Yellow mud is beneficial in digestive disorders, abdominal diseases and diabetes mellitus. For this, mud bandage is applied on the low abdomen. In case of liver disease, the mud bandage is applied on the respective part. White mud is useful in diseases of brain and liver. Black mud eliminates poisoning and cures skin diseases. Red mud is good for abdominal pain, arthritis, paralysis, etc. The sandy mud available in rivers may be used every where. In case of snake bite, cholera and gastro-enteritis, it is advocated to burry the whole body under earth keeping the head out.

AIR AND SUNLIGHT

Air and Sun light are important components of the armamentorium in naturopathy both for promotive and curative therapies. Naturopathy considers air and light equally important sources of vital energy as has been stated in the context of water and mud. The importance of air and light for survival of life is well known. According to biological scientists no life is possible without air and light. This is why nature has provided enough air and light on the earth so that it may be freely available to all living creatures. Not only this, the nature always inspires the living beings to consume air and light as much as possible. Adolf Just has rightly pointed out that the nature creates man naked on this earth and the man lived naked on this earth in ancient times for a very long time. The nature intends that the man should live naked on the earth in the natural environment and enjoy freely the envigourating air and light and keep healthy and happy.

It is not only the statement of scientists but is a common experience that all animals and plants biologically depending on air and light start fading and fainting when placed in dark, and begin to regain liveliness when brought back to light. The plants

become colourful immediately after receiving the rays of light. Animals are also seen to become very active and envigourated when left in open sun.

But unfortunately the so called civilised man always keeps his body covered with lot of clothes thus pushing the body in darkness keeping the same away from air and light making the body weak and pale, How nice it could have been, if man could feel the voice of nature and could get inspirations from the vigour and vitality of the happy birds, animals and plants and could be prepared to allow the pleasant breeze of air and vitalising rays of the sun on his body which could induce natural vitality in the life.

If the body is not covered with clothes even in dark, significant transfer of energy continues through the hair roots. The clothings obstruct such a transfer. Hence it is very useful to remain naked for some time. It is useful to walk or lie down outside the house keeping major parts of the body naked. If it is not possible one could also be benefitted even by living naked in rooms. Lying down on earth is more natural and beneficial than lying down on the roof because the direct contact with the earth permits direct passage of vital energy in the body which is not possible while sleeping on a cot or on the roof. To live naked and to receive free air and light bath are natural laws. The original nature of a living creature is to live naked. To cover the body with clothes is unnatural. This is why the children like to live naked. We all know that small children and infants, even if sick, frequently throw away their cover sheets and try to come out in contact of nature. As a matter of fact this is good for their health, but due to ignorance we repeatedly recover the body. During high fever often it is emphasised to cover the body, but it is not correct. The naturopaths always advise to remove the clothes and coversheets in cases of fever. This helps in getting the temperature down. It is also advisable to keep the doors and windows of the room open. Hydrotherapy is a common practice in hyperpyrexia, but a common man is not aware about the utility of acration in cases of fever. Usually a layman feels that open air will raise the fever. This is a misconception. Exposure to open air is always useful in cases of fever. Many misconceptions are prevailing in the society about cold and corrhyza. Even doctors apprehend and advocate to avoid exposure to cold. Naturopaths

believe that common cold is a natural reaction for purification of the body and ultimately it is good for health. Often we all apprehend that we may fall ill if we expose ourself to cold in winters. This is a baseless fear. The healthy body has inherent ability to produce adequate heat and to counterbalance the external cold. It may be pointed out that while living in closed rooms, away from nature the body fails to get natural pure air which is essential for production of adequate heat and energy. Hence once we are left outside in open air, the chances of production of heat are accelerated which may counterbalance the cold to which the body is exposed. Therefore we should not bother about heat or cold while going out. Air and sun bath keep the body warm and promote vital energy. There may not be a feeling of cold. This can be experienced by practice. Thus air and sun light are natural means of keeping healthy.

METHODS OF AIR AND SUN BATH

In summer air and sun bath should be taken only in the morning. The touch of cold air of early morning is very pleasant. The soft rays of the early morning sun when fall on the body, they pour real energy in the body. If the heat is severe, it is advisable to walk in shade in cool places to take sun bath. While taking sun bath, one should protect the face from sharp sun rays. The most natural method of air and sun bath is to keep relatively naked irrespective of day or night, hot or cold weather. It is more healthful to receive air and sun bath in an open place or in a garden than in a room or courtyard. Ponds, lakes, rivers, sea-shores and bathing ghats are also very good for sun bath. Such people who can not afford to go out such as women, should take sun bath by living near the windows of their rooms in all seasons. The infants should also be made habituated of sun bath from the very beginning. It is useful to do exercises or to have brisk walk or to run or jump while enjoying air and sun bath. It is also useful to lie down on the earth, to walk naked feet and to walk naked head in rains. In all seasons all day and night the windows of living rooms should be kept open so that enough air and light is available. From health point of view small light houses are better than big houses. Clean airy huts and ordinary houses provide more healthy and natural living than densely built houses with narrow streets.

USES OF AIR AND SUN BATH

The importance of air and sun bath has been discussed earlier. Availability of open air affords adequate oxygen for internal metabolic activities in the body. Besides this, the external touch of air on the body surface pours energy and lusture in the body. Similarly light also provides vital energy. This accelerates the circulation of blood and production of heat. The medical scientists also state that there is increased genesis of vitamin-D in the skin by exposure to sun. However, all the natural benefits of sun bath cannot be explained only in terms of vitamin-D production.

The white sun rays comprise of seven coloured rays. These colours follow a pattern which can be observed in the rainbow. These colours are Violet, Indigo, Blue, Green, Yellow, Orange and Red. These seven colour rays are formed due to three pure colour rays viz. Blue, Yellow and Red. They are known as primary colours. Other colours are nothing but the combinations of the primary colours. In sun therapy, it is believed that the rays of different colours have different types of specific effects on the body. Therefore different kinds of symptoms manifest due to the deficiency of the respective different types of rays, and hence such symptoms should be treated by respective rays. This is the basic principle of Sun Therapy.

NATURE CURE MASSAGE

Massage is an important nature cure procedure. Āyurveda also advocates massage as an useful *Vahiḥ Parimārjana* procedure. As a matter of fact massage forms the main treatment in Keralīya *Pañca Karma*. However, in naturopathy, massage is used entirely from a different point of view. It has its own original approach. According to naturopathic principles, massage has not only a physical effect on the body. As a matter of fact a nature massagist transfers his own energy, heat and vitality in to patient's body through his touch and manipulation and thus he makes him healthy and energetic. It has been postulated that a young healthy and handsome man can transfer his youth and energy into a sick and senile patient by way of will power and physical touch. It is also believed that two persons while sleeping together can share their vital energy to each other. It has been

claimed that many senile men and women can be made young and youthful with the help of young people. Such a transfer of vital energy is easily possible from a man to a woman and from a woman to a man. However, it is necessary to emphasise that this has nothing to do with sex.

Adolf Just has emphasised that patting, rubbing or pressing the body or a part of the body is the oldest natural method of relieving pain. It is a common practice that when a child falls down and gets injured, the mother immediately starts lightly massaging the part and the child gets immediate relief and stops crying. In this practice the role of expression of affection by the mother is also important. If the same practice is done without affection, this does not work, because in this situation the phenomenon of transfer of energy as stated above does not take place. It is not only a physical healing; but it is also a kind of psychic healing and the role of mind is important. The emotional and personal touch is an important component of nature care massage. This is why it is advisable that the massage be performed by own relatives like mother-father, son, wife or husband as they will not only give physical massage but will also give an emotional touch permitting free transfer of vital energy. This is nature cure massage. In this, the transfer of vital energy largely depends on mutual love and sympathy. This should take place in a natural way.

The natural massage does not need massaging media like oil etc. Ordinarily the part to be massaged should be made wet with water and the massage should be performed quietly with steady and firm hands. The best time for nature cure massage is immediately after bath. After bath one should dry the body by rubbing the entire wet body with firm hands.

TYPES OF MASSAGE

Technically massage is of several kinds. It can be classified as below :

1. Smooth and Coarse } : With or without the help of oil
Wet and Dry } or water.
2. Udvartana and Utsādana i.e. paste and powder massage.

3. Types of massage technique :
   - Rubbing
   - Strocking
   - Tapping
   - Beating
   - Vibrating

USES OF MASSAGE

1. Nature cure massage permits transfer of heat, vital energy and health.
2. Massage renders the body compact and well formed, accelerates the blood circulation which affords adequate blood and oxygen to the entire body.
3. Massage mobilises the unwanted incompatible products of the body and release them to be excreted. This relieves local pain and inflammation and brings about systemic purification.
4. Massage promotes elasticity and functional ability of nerves, tendons and muscles. The body becomes soft. It also prevents the stiffness and sclerosis of blood vessels.

THERAPEUTIC USES OF MASSAGE

Massage is an important *Vahiḥ Parimārjana* procedure which is commonly used in treatment. The uses of massage in physiotherapy and rehabilitation are well known. Besides the use of massage for promotion of health in healthy states; it is used as a therapeutic aid in a number of diseases such as arthritis, lumbago, paralysis etc. In addition, in any sick person slow patting and light massage of the body help rapid recovery due to improved flow of blood and energy production. Thus massage is important both from health as well as from disease point of view. It promotes blood flow and vitalises the body and renders the body more elastic. Tiredness and bodyache are relieved and the excretable products get eliminated and the body gets purified.

GENERAL METHOD OF MASSAGE

Ordinarily before starting the massage the patient is asked

to lie down on face with the body completely relaxed. Classically nature cure massage does not require oil or medication. However in present times oils or medicated oils are also used. First of all the massagist starts massage on the back with fingers on two sides of the spinal column i.e. on nerve roots from above downwards. This is called spinal massage. The spinal column i.e. the vertebrae are also massaged with light hand from below upwards upto the neck. After completing massage over the spine and the nerve roots, the whole back is massaged with the palms of the hands. Simultaneously both buttocks are massaged with round movement of palms ascending upwards upto shoulders. The shoulders are massaged repeatedly by circular movement. After massage, tapping with the edges of both the hands is given on the spine and its two sides i.e. nerve roots followed by strokes by the closed fists. Finally the massage is stopped after circular movement of the palms on the whole back.

After finishing the back massage the patient is asked to take a turn to supine position for massage on the chest and the abdomen with legs flexed. This should be followed by massage of limbs and then of the head.

REST AND RELAXATION

Rest and relaxation are among the other important prescriptions in Nature cure. Adequate rest is a natural prerequisite after work. Continued work without adequate rest leads to disproportionate wear and tear in the body. Rest is both physical as well as a mental entity. Many times even in the state of complete physical rest if one continues to be in the grip of intensive thinking and mental tension, he gets tired. In such a situation complete rest is essential. Change of work is an important aid for mental rest. If one is mentally tired due to continued engagement in a particular type of mental work, he should stop that particular mental work and start another kind of work. This affords full mental rest without total interruption of work. For example, if a student gets mentally tired by reading or studying mathematics, he may shift to the study of another subject like history and so on. This may not be totally true in case of physical rest.

Rest helps in sublimation and excretion of unwanted

incompatible products in the body and the body becomes chemically clean and pure. For rest, it is not necessary to remain continuously lying in bed. One can receive enough rest and relaxation in relatively small time. Rest is a psychosomatic phenomenon and hence it should be practised with full mind. As stated earlier change of work is an important method of rest, hence one should plan his work carefully so that work and rest may continue hand in hand.

Rest and relaxation are also important components of therapy in the management of different disease states. There is a need of well planned systematic rest and relaxation in consideration of the nature of illness so that adequate rest may be given to the part of the body specially involved besides the systemic rest. It is well known that catabolic activities prevail during active work while the anabolic activities predominate during rest and relaxation. Hence if one persues planned work and rest, he may maintain a balanced state of metabolism in the body with good health.

EXERCISE AND MEDITATION

Regular exercise and meditation are also important aspects of nature cure therapy. Yoga practices are also included under nature cure procedures. Exercise is very important for growth and stability of the body. Exercise promotes strength of the body. The bones and muscles become strong. Exercise also promotes *Agni* i.e. the digestive fire and helps in proper digestion and elimination of unwanted incompatible products from the body. The body remains alert and active. It helps in doing away the laziness. From biological point of view, exercise accelerates blood circulation and oxygenation in the body leading to increased vigour, vitality and strength. Therefore one should regularly do exercise everyday. Exercise should be such which may mobilise all parts of the body. Exercise should be followed by adequate rest. Regular walking is a good exercise for a physically handicapped but a normal person should do full exercise. One should select a suitable set of exercises for him considering his age, personality type and body strength. The *Yogāsanas* are also good exercises. The *Āsanas* provide adequate rehabilitative exercise to different parts of the body and relaxation.

The nature cure system also advocates the practice of meditation for promotion of mental fitness. Regular practice of meditation keeps the mind stable and free from conflicts. The thought process remains adequate and there is good emotional balance. The practitioner gets good sleep and his intellect is promoted. There are several techniques of meditation. Any of these may be practised. The main purpose of meditation is to develop adequate mental concentration. Ordinarily the following factors are essential prerequisites for the practice of meditation : (1) to stay in peaceful isolation, (2) to keep silence, (3) peaceful place, (4) chanting of a suitable *Mantra,* (5) control of breath. Regular practice of meditation in this manner promotes mental stamina. Therefore meditation should be practised alongwith other components of nature cure described earlier.

FASTING AND NATURAL DIET

FASTING

Planned fasting is an important practice advocated for preservation of health and as a therapeutic procedure in the management of different diseases. In Āyurveda *Laṅghana* has been considered as a major *Antaḥ parimārjana* procedure. Fasting is the best method of *Laṅghana*. It is considered auspicious, *Āma doṣa hara,* vitalising and defattening procedure of great utility. Similar to Āyurveda; Naturopathy also considers fasting as a major therapeutic procedure. *Vrata* and *Upavāsa* i.e. fasting are practised as religious rituals from the very ancient times possibly because of its utility for health. The relavence and importance of fasting has increased in modern times because of the increasing incidence of a variety of ailments caused by dietary indiscriminations. Irregular and indiscriminate dietary habits lead to loss of digestive power and metabolic disturbances leading in turn to a variety of systemic diseases. Such ailments are treated by fasting in nature cure. Fasting has special significance in the context of gastrointestinal diseases and fevers. Similarly fasting is important in the cure of Diabetes and Obesity. A completely healthy person too should practise periodical fasting. However, fasting is not useful for a very weak person. This is why Āyurvedic texts contraindicate fasting in

cases of *Rājayakṣmā* i.e. Tuberculosis and thin diabetics. Likewise fasting provokes *Tīkṣṇāgni* in persons with good digestion. Hence it may be avoided. During fast if one experiences extreme weakness, he may take small quantities of dry fruits and similar other energy producing materials in the morning. If the appetite is good and there is feeling of exhaustion, he may take small amount of light liquid diet in the noon too. This is called half fasting. Everybody should practise such small fasts. Major fasting for upto three days length may be practised by self without any medical supervision. However, fasting longer than three days duration should be practised in supervision of a naturopath, because prolonged fasting may bring about certain complications. Fasting longer than 15 days is not advisable. During long fasts one should continue to take adequate water with Lemon juice. In second week of fast one should take fruit juice upto half a pound. If fruit juice causes burning sensation in the abdomen, small frequent milk feeds may be taken. Juicy fruits like lemon, oranges, mausammi, grapes, apple and mangoes are good for extracting juice. In the absence of fruits, one can use appropriate vegetable juices.

Usually there is constipation during fasting period, hence enema may be given. In the beginning enema with mild warm water should be given. Later, enema with normal water should be given twice a week. In case of weak persons it is advisable to give light massage on the body during fasting to promote blood circulation. Sometimes one may develop fever, dry mouth, anorexia, nausea and vomiting during the period of fast. For this the patient is advised to continue to take lemon water frequently and *Elādi Cūrṇa.* If there is rapid loss of weight and restlessness during fast, one should be advised to break the fast carefully. There is a need of extra care while breaking the fast. To start with, the patient should be given liquid food such as milk, fruit juice, vegetable juice etc. gradually followed by solid food on the pattern of *Saṁsarjana-Krama.*

NATURAL DIET

Diet is an important consideration in Nature cure. Water, mud, air, light, exercise, fasting and similar other constituents of

nature cure may not yield adequate results in the absence of suitable diet and dietary restrictions. Nature cure dietetics is also based on the same principles which we have discussed earlier in the context of other nature cure procedures. The basic approach of Nature Cure is to bring the man nearer to the nature. Water, earth, air, sun etc. are part and parcel of the Nature. The living body is made of the same components of the nature and hence the living body will enjoy the best state of health if it remains in the midst of the nature. In tune with the same principle the diet should also be natural.

This is why most of the naturopaths emphasise on the consumption of fruits, vegetables and milk diet. As a matter of fact there is no better food on this earth than the fresh juicy fruits. The fruits provide enough minerals, vitamins, energy sources and regenerative materials. The digestion and metabolic activities in such cases produce minimum excretables and as such the body remains internally clean and strong. Similarly the green salads and boiled vegetables are also very useful. Milk is also considered highly vitalising food stuff. Milk in itself is a complete food and it does not cause undue vitiation of the body and retention of excretables. In natural diet it is also advisable to use other products of milk like curd and butter milk.

Besides the choice of articles of diet as mentioned above it is also important to follow health promoting methods of consuming diet. Diet should be taken on fixed timings. Second diet should not be taken unless the previous diet is already digested. One should eat at least twice and at most thrice a day. Frequent eating and over eating results into indigestion and loss of digestive fire which is the primary cause of all systemic diseases- *"Rogāḥ Sarvepi Mandegnau"*. Hence *'Mitāhāra'* i.e. small food has been praised. One should practise fasting time to time. One should keep happy and quiet while taking a meal; this promotes appetite and keep the process of ingestion and digestion in proper order. The utility of slow eating with adequate chewing is well known. This breaks the food in small particles and provide enough saliva which initiate the digestion from the oral cavity itself. Thus the digestion in stomach and intestines

becomes easy. The Āyurvedic classics have given great emphasis on cooking and method of taking food in the context of *"Aṣṭavidha Viśeṣa Āhāra Āyatana"* and *"Dwādaśa Aśana Vicāra"*.

Suitable drinks are equally important after meals. When and what should be drunk is always important to consider, clean drinking water is the best drink. Besides, fruit juices and milk are the next natural drinks. Tea, coffee and other artificial drinks and liquors are not good for health and hence should be avoided. While eating, one should not drink water frequently, this dilutes the digestive juices and weakens the digestion. Water should be drunk at the end of the meal. Drinking water immediately before meal is also harmful for digestion.

PRINCIPLES OF WESTERN MODERN PHYSICAL MEDICINE AND REHABILITATION

PHYSICAL MEDICINE

Physical medicine employs the effective physical properties of light, heat, cold, water, electricity, massage, rest, exercise and mechanical agents for diagnosis and treatment of patients suffering from different types of disorders.

REHABILITATION

Medical rehabilitation is the process whereby a man is made mentally, physically, socially, vocationally and economically equivalent to his state before he became sick or injured. It is one of the important branches of medical practice. It is a philosophy of living, an attitude of mind on the part of the medical profession and public alike.

The broad concept of rehabilitation envisages the restoration of the handicapped individual to his fullest physical. mental, social, vocational and economic capacity. Rehabilitation is now linked closely with physical medicine.

The former Council of Physical Medicine of the American Medical Association was subsequently renamed as the Council of Physical Medicine and Rehabilitation. A full section of Physical Medicine and Rehabilitation has been established in the Scientific assembly. A full fledged department of physical Medicine and Rehabilitation has five divisions to carry on the total programme as mentioned below.

1. Physical Medicine
2. Occupational Therapy - both
    i. Functional and
    ii. Diversional
3. Corrective Physical Exercise
4. Educational retraining which brings in the idea of fitting the individual to like with his limitations in a better and happier way.

5. Vocational Rehabilitation which helps the individual to become partly or wholly self supporting.

DESCRIPTION OF PHYSICAL MODALITIES

The use of different physical modalities produces changes in the body through physical means. These various physical modalities either increase or decrease the amount of heat in the body, either locally or all over the body. They may produce chemical changes in the skin, in the blood or in the individual cells of the body. Sometimes mechanical changes are also found due to pressure on the outside of the body or to stress and strain in the skeletal system through movements and exercises.

1. WATER

According to Mc.Clellan the physical properties of water make it a flexible therapeutic agent with a remarkable capacity for gathering, absorbing and transmitting heat and cold.

a. ICE

Water solidifies at O^0C and in the form of ice can be applied locally. It is generally used for reduction of body temperature and is applied over the oedema due to trauma etc.

b. STEAM

At 100^0C water turns to steam which may be applied for fomentation in fine jets or in steam box or room.

c. In liquid form (i.e. hot or cold) water can be used as baths, sprinkled, sprays, packs etc.

2. THERMAL AGENTS

Heat is one of the vital physical modalities. Different methods are available for elevating the temperature. They are e.g. ;

1. RADIANT HEAT :

a. ULTRAVIOLET RADIATION : This is obtained from the Sunlight, the carbon arc and the mercury quartz lamp.

b. INFRA RED RADIATION : It is obtained from glowing metallic objects, such as iron, carborundum or heated metallic wire.

2. a. HOT PARAFFIN PACKS :

It is effective in raising the temperature of local regions of the body. It is generally recommended in the treatment of arthritis.

b. HOT PARAFFIN DRESSING :

The skin over the joints is first oiled then alternate layers of hot paraffin and muslin bandage are applied. This is one of the best methods for applying heat to various joints.

c. PARAFFIN BATHS :

This is also one of the common and effective measures to raise the temperature. Paraffin baths are specially constructed for immersion of an extremity in warm liquid Paraffin.

3. ELECTROTHERAPY :

Electric currents passed through a biologic system can produce thermal, physiochemical and physiologic effects. The applications of this biotechnology are rapidly increasing in therapeutic uses. This growth is due both to improvements in instrumentation and scientifically controlled research, which have begun to delineate mechanisms and documents results.

In ancient times, the electrical stimulations were also used for therapeutic purposes. It has now become a clinical tool to be used by physical therapists in programmes that have been documented through clinical research.

a. Low voltage current

b. Faradic and sinusidal currents

c. Diathermy

i. Short wave diathermy

ii. Microwave diathermy

d. Transcutaneous electrical nerve stimulation (TENS) which is now well recognised for the management of various acute and chronic pain syndromes.

OCCUPATIONAL THERAPY

This is one of the important measures in the field of physical medicine and rehabilitation. The principles of occupational

therapy are not new. Manual, industrial, recreational and educational activities have been used for centuries in the management and care of the patients. The value of occupational therapy was recognized in World War-I when broadly diversified programmes were established in the military hospitals.

Occupational therapy provides a definite programme for treatment of a patient, in which some mental or physical activity is scientifically applied under medical supervision for the purpose of overcoming functional disability for improving morale, and for re-establishing the patient's capacity for moral activity.

An important step in the treatment of a seriously disabled arthritic patient is to stimulate and encourage him so that he will regain confidence and the feeling of capability and orientation towards useful and remunerative persuits. There is still a distinct challenge to occupational therapy to broaden its scope and to modify its techniques along these lines. The employment of various types of shop work involving mechanical crafts, such as carpentary, radio-tr construction and certain agricultural persuits should be developed.

Many simple household work can be utilized to advantage for strengthening muscles and increasing range of motion of joints. Riding of an ordinary bicycle will be found useful for increasing range of motion of the hip, knee and ankle joints. The height of the seat and the adjustment of the pedals can be arranged so that it is possible to increase gradually the range of motion in the joints. Such pedaling motion helps to develop the muscles of the legs, hip and back. When the ankle alone needs exercise a foot power sewing machine may provide required exercise.

Occupational therapy is very effective method of treatment and can do much to shorten convalescence and improve the degree of recovery. It promises a broader civilian use of its method in rehabilitation.

The present concept of occupational therapy is that a person disabled by disease or injury shall not be permitted to remain inactive for long periods but at the earliest possible moments shall be given active occupation that is graded as rapidly as his strength permits, to normal levels of activity.

MASSAGE : Current applications :

This is one of the important methods of treatment to reduce muscle spasm, relieve pain or improve circulation. The choice of the appropriate massage technique is diverse and includes such regular procedures as EFFLEURAGE, PETRISSAGE, FRICTION, KNEADING, VIBRATION AND PERCUSSION. Although the mechanical, physiologic, psychological and reflex effects of these therapeutic procedures are well known and accepted, a brief summary of these techniques follows.

(i) EFFLEURAGE :

It is superficial or deep stroking movement, which is usually used to assist venous and lymphatic return in the extremities. It is also used to explore and evaluate areas of tenderness and soft tissue irregularities or to passively stretch specific muscle groups. Effleurage has mostly a relaxing effect.

(ii) PETRISSAGE :

With its wringing, squeezing, kneading and skin rolling manipulations petrissage intends to free inter-tissue adhesion and to increase circulation. Besides the mechanical effect, it has a strong stimulating and reflex effect especially with skin rolling.

(iii) TAPTOMENT :

Or striking movement, such as nacking, cupping, slapping, pincement or beating, has a very stimulating effect and can be either superficial or deep. The finer movements are used in selected neurological conditions.

(iv) VIBRATION :

Vibration or shaking does loosen up soft tissue and enhances circulation. It can have soothing and stimulating effect according to the intensity and speed. It is used in over fatigued muscles, specific joint lesion etc.

VOCATIONAL REHABILITATION

In 1920 the vocational rehabilitation programme was originated as a joint federal state effort to private services for handicapped civilians, to enable them to become employable, to get and hold a job. This programme should provide the following services :

(i) Medical check-up in every case, to determine the extent of disability, to discover possible hidden or secondary disabilities, to assess work capacity and to help determine eligibility at no cost to the individual.

(ii) Every person should take interest in every case to help the disabled person to select and attain the proper job.

(iii) Artificial appliances such as limbs, hearing aids, etc. to increase work ability.

(iv) Training for the right job in school, college, universities, or jobs in industry or through correspondance courses are more helpful.

(v) Psychiatric, medical, surgical and hospital care as needed to remove or reduce the disability.

(vi) Necessary instrument or licenses are to be provided to the disabled person freely.

(vii) According to physical and mental capabilities and job training of the disabled persons the appropriate jobs are selected for the individual.

REHABILITATION PROFESSIONALS

1. PHYSICAL THERAPIST :

Physical therapists play a vital role in the Rehabilitation programme. They can evaluate the physical capabilities and limitations and advise treatment to alleviate pain, correct or minimize the deformity, increase strength and mobility and improve general health. The whole treatment programme is planned on the basis of findings and is always in consultation with a physician. Physical therapists always try to motivate and instruct the patient and his family members in carrying out the treatment and rehabilitation programme.

Sometimes the disabled person becomes anxious or discouraged. Motivation and encouragement are necessary for keeping them well. The physical therapist should have good physical stamina, manual dexterity and the patience to achieve the goal.

2. OCCUPATIONAL THERAPIST :

This is also an important therapy in the rehabilitation

programme. Occupational therapy is a health profession, the main purpose is to assist the individual to achieve his capacities in daily living activities at a level which allows as much independence as possible.

Occupational therapist helps the disabled person in various ways including self care activities (e.g. eating, dressing and handling objects), work activities (related to school, home and employment) and plays (e.g. games, sports, hobbies and social activities). The occupational therapist should analyse the daily living performance of the individual and determining what is required to successfully carry out these tasks.

The occupational therapy programme may be provided in the home, rehabilitation centre, hospital out patient, clinic, nursing home etc.

3. ART THERAPY :

Art therapy is also included in the rehabilitation services. Art therapy may be used to help deal with a wide variety of mental, emotional and social problems, and in the alleviation of psychological stress accompanying physically handicapped. Art therapists also have a contribution to the diagnosis as well as the treatment of psychological disorder. Art as a non-verbal communication in a psychotherapeutic process is stressed.

4. MUSIC THERAPIST :

Music is helpful in the healing process, it was practised in ancient times. It is one of the important contributors in the rehabilitation programme. This is used to facilitate the emotional, psychological, intellectual and physical growth in disabled or impaired persons of all ages.

Music therapy courses are going on in different institutions. And students are required to take courses in biological sciences, psychology, sociology, and anthropology as well as theory, history, education and major instrument courses in music. There are various specialized music therapy courses such as psychology of music, influences of music on behaviour, music in recreation and music in therapy.

Previously the music therapists were employed only in the psychiatric hospitals. Now a days they are employed in general

hospital, clinic, homes for the retarded, special educational programme, community mental health centre and emotionally distressed and convalescent centres.

5. DANCE THERAPIST :

A dance therapist works with patients using a form of non-verbal psychotherapy within the framework of a therapeutic contact. Dance therapist can work with all ages, in groups or with individual. It is used in the treatment of those who require special services because of emotional, behavioural, perceptual or physical disorder. Dance therapists are employed in psychiatric hospital, clinics, geriatric setting, special school, rehabilitation centre and other treatment centres.

American dance therapy association was first established in 1966. This organization has facilitated communication and the exchange of idea that is so critical to the development of a new profession.

6. RECREATION SPECIALIST (Therapeutic) :

Therapeutic recreation is one of the branches of the recreation profession. The specialist plans and directs recreational activities for patient recovering from physical and mental illness with a temporary or permanent illness. Recreation specialist always works with rehabilitation team in a hospital, mental institution, nursing home or retarded home.

It is based on the concept that the enjoyable use of leisure time can contribute to both the mental and physical well being of the disabled.

The therapist must therefore have strong leadership qualities, versatility, understanding, patience and the ability to maintain congenial relationships with the patients of different ages and back grounds.

7. CORRECTIVE THERAPIST :

This is also called adapted physical education. This therapy is based on the application of medically prescribed therapeutic exercises and physical education activities in the management of the disabled person. This type of therapy is used not only to improve the patient's physical condition but also to improve

mental status, restore self confidence and stimulate resocialization.

During the last thirty years a broad spectrum of procedures has been developed including postural exercise, mat exercise, therapeutic swimming, gravity exercises, orthopaedic exercises, stump strengthing and elevating techniques; self care training and specific exercises for the paraplegic, blind, arthritic, cardiac patients and the aged.

8. EDUCATIONAL THERAPIST :

This is a special application of teaching programme to individuals with psychological or physical disability. The main object of education therapy is to overcome tendencies towards depression withdrawal and defeatism by arousing new interests and developing academic and practical skills. This helps them to build self confidence and keep them in touch with the world of people and ideas.

The courses are usually on a high school standard and include the following subjects-English, Biology, Chemistry, Mathematics, Typing, Shorthand and Bookkeeping.

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RECENT ADVANCES IN PAÑCAKARAMA THERAPY

As would be obvious from the discussions in this monograph, *Pañca Karma* Therapy is not only a major therapeutic component of Āyurvedic Medicine, but is also the fundamental basis of treatment in this system. With the passage of time, like several other aspects of Āyurvedic practice the *Pañca Karma* Therapy declined in its usage. Possibly because of its radical approach and complex methodology, the physicians during middle ages started overlooking *Pañca Karma* therapy and started treating patients with the help of drugs and diets alone. By the beginning of modern times, *Pañca Karma* Therapy completely disappeared from routine practice specially in North India. However a simplified form of *Pañca Karma* therapy continued in practice in traditional way in South India, specially in Kerala. Those practices are basically different than *Classical Āyurvedic Pañca Karma* and are popularly known as *Keraliya Pañca Karma*. These procedures are very popular and are very effective in certain conditions. As a matter of fact it is the lively Keraliya tradition which inspires to revive the *classical Pañca Karma* Therapy in full form today.

When the phase of revival of Āyurveda and Āyurvedic practice started after independence, attention was also drawn towards *Pañca Karma* Therapy. Some studies were launched in different centres. But except creating an awareness about the importance of this branch of therapeutics no worth mentioning scientific development appears to have been made. However several attempts were made to do conceptual and theorectical evaluations of the subject. Some independent books, monographs, thesis and papers were written time to time on *Pañca Karma* Therapy. *A* Postgraduation thesis submitted by Chaturvedi, G. N. (1956) under the advice of Dwarakanath, C. subsequently published as a monograph as part of the Journal of Research in Indian Medicine (CCRAS) is worth mentioning. This work for the first time presented a critical evaluation of the concept of *Pañca Karma* Therapy in the light of the fundamental principles of Ayurveda. It clearly visualised the scope of thls

therapy and possible directions of its revival and perspectives. Kasture, H. S. published a book on *Pañca Karma* Therapy presenting the subject in full form with necessary details collecting information from different parts of classical Āyurvedic literature. This is the next important work which can be considered as an advancement, as such a work was essential to provide guide line for uniform practical work at different centers interested to launch studies and activities. Later, Dwivedi, M. L. Compiled a voluminous work on the literary aspects of *Pañca Karma*. So for as the practical work and investigative attempts are concerned progress has not been very encouraging. There has not been even a single study of *Classical Pañca Karma* Therapy administered in sequential manner planned, executed and evaluated on scientific parameters. There have been some sporadic reports on use of some selected procedures in treatment of some selective diseases, that too not well planned. There have been several reports on uncontrolled evaluation of the effect of Keraliya treatments in certain conditions.

Among scientific studies, a series of papers on *Pañca Karma* Therapy appeared during 1964-72 reported by Singh, R. H. and Chaturvedi, G. N. from Banaras Hindu University who proposed a model of clinical and laboratory study on the efficacy and effect of these practices. They evaluated the clinical and metabolic consequences of *Snehana, Swedana,* and *Baṣti* in human subjects and also in laboratory animals. Singh, R. H. and Singh, R. S. (1978) reported their observations on standardization of *Vamana* and *Virecana Karmas*. They administered *Vamana* and *Virecana* in sequence after *Pūrva Karma* in a series of hospitalised patients. They standardised the dosage of the selected *Vāmaka/Virecaka* drugs, their pattern of effect in terms of onset of effect, *Vega, Vega Kāla,* volume of material vomited/purged and also the quantum of *Doṣa Kapha-Pitta* eliminated. They used the total mucopolysaccharide content of vomitus and stercobilinogen content of the faeces as provisional indicators of the quantum of *Kapha* and *Pitta* respectively expelled during the procedure under evaluation. Possibly this was the first attempt to standardise the individual *Karmas*. Lately Sachdewa, K. (1987) from B.H.U. estimated Histamine content in blood before and after *Vamana* and also the Histamine content of the vomitus in cases of Bronchial Asthma. He suggested to use the rate of removal of histamine as an index

of *Śodhana* effect for *Kapha*. He described *Vamana* therapy as a method of gastric dialysis of histamine and suggested that *Vamana* might help asthmatic patients through this mechanism. Earlier Kurup, P.N.V. had reported that blood level of cholesterol could be lowered by *Śaṃśodhana* therapy. Preliminary studies are on record showing changes in blood electrolytes, acid/base contents, and nitrogen breakdown products through *Śodhana* procedures administered in the form of Gastric and/or Colonic lavage.

Singh, R. H. and Gupta P. K. conducted a good study on the effect of *Lekhan Basti* on Lipid profile and cardiac risk factors in Cases of Ischaemic heart disease and Hypertension. The work was presented as a Doctoral thesis to Banaras Hindu University and was subsequently published in Journal of Research in Āyurveda and Siddha (1998).

In recent years Singh, L. M. and associates (1986-90) reported from B.H.U. Varanasi interesting studies on the effect of *Basti* in cases of chronic obstructive/non-obstructive uropathies viz chronic recurring urinary infection, benign enlargement of prostate and urethral syndrome. Treatment of these patients with *Anuvāsana Vasti* brought about substantial symptomatic and clinical relief including relief from recurrence of acute episodes of UTI. However, there was no bacteriological improvement. The urine cultures remained positive, but the patients had no symptoms after a course of *Basti* therapy. The authors did not come out with definite interpretation. However, it is not difficult to explain the phenomenon from Āyurvedic point of view. Possibly the patients taken for treatment by these workers were suffering from *Udāwarta* disease a known *Vātika* diathesis. *Basti* therapy eliminates vitiated *Vāta* and *Udāwarta* is relieved. The patients become symptom free because the symptoms were not because of infection but were because of functional disorders.

Basti therapy has also been tried by different workers in a variety of conditions with varied claims of efficacy such as in *Pakṣavadha, Vāta Rakta, Sandhivāta* etc. But, as most of these studies are uncontrolled, none of them really demonstrate its efficacy. Recently Paranjape conducted studies on the use of *Kṣīra Basti* in the care of premature babies with encouraging results. Such babies who were unable to suck the mother's breast, were put on *Kṣīra Bastī* regularly. Definite nourishing effect was demonstrated.

Basti is one of the most important components of classical *Pañca Karma* specially indicated in *Vātika* diseases i.e. the most difficult class of diseases. The classics consider *Basti* as half of the total treatment in such patients. Why *Basti* is so vital in *Vātika* diseases, is intriguing. Dwarakanath in early Sixties suggested that *Basti* therapy by virtue of its medicaments greatly influences the normal bacterial flora of the colon. By doing so it modulates the rate of endogenous synthesis of vit. B_{12} which is normally manufactured by colonic bacterial flora. This Vit. B_{12} may have a role to play in the maintenance or regeneration of nerves. According to him it was one of the possible mechanisms through which *Bastis* could help in *Vātika* or neurological diseases. However, this hypothesis was never tested on scientific parameters. Hence, it still remains a question why Āyurveda attaches so much of importance to *Basti* therapy. This question becomes prominent in view of the fact that the actual efficacy of *Basti* therapy is also not yet demonstrated in clinical trials on conclusive standards. This is in contrast to other *Karmas* like *Snehana, Swedana, Vamana, Virecana* etc. whose efficacy has been demonstrated to some extent. The recent concept of gut brain and Enteric nervous system located in colon should be viewed in the light of the Ayurvedic concept of *Vata* and its role of Basti.

VAMANA AND LIPID CLEARANCE

Consumption of Fats during *Snehana,* which is the essential *Pūrva Karma* for all *Saṁśodhana* procedures is often questioned for the possibilities of hyperlipidemia particularly in patients who are elderly and who carry other CVD risk factors. But we have observed in our clinical practice that 5-7 days of *Snehan* does not cause any notable increase in systemic lipid levels and whatever transient rise occurs, it gets readily cleared off during *Vamana* and often the lipid level after *Vamana* remains significantly lower than its original pretreatment levels. The following table containing observations on 20 patients undergoing *Vamana* Therapy clearly substantiate the above contention (see Table).

Pattern of Serum Lipid levels following *Snehana* and *Vamana* Therapy		
Total Serum Cholesterol in mg% (N=20)		
Before Therapy	After Therapy	
Mean SD	After Snehana	After Vamana
226.60 ± 58.72	238.78 ± 48.32	221.60 ± 39.52

THE FULL AND *PITTĀNTA VAMANA*

A successful *Vamana* should be able to eliminate all the volume of the medications and preparatory drunk material during the *Vamana* and the last bouts should carry yellow bilious material containing bile signifying that the Upper GI Tract has already emptied and the biliary tract is squeezing bile getting actively cleansed. This is called *Pittānta Vamana.* A series of 20 patients undergoing *Vamana* in our hospital exhibited the following range of elimination as shown in the following Table.

Mean total oral intake and output during *Vamana Therapy* (N=20)			
Mean ± S.D.	Intake Ml.	Output Ml.	Difference Ml.
	5680 ± 580	5798 ± 268	118 ± 220

HISTAMINE DIALYSIS IN *VAMANA*

The cases of Bronchial Asthma undergoing *Vamana* at *Pañca* Karma Therapy Center at the university hospital BHU showed significant reduction in Blood histamine level which was found proportionate to the amount of Histamine expelled in the vomitus during *Vamana.* This indicates that the blood histamine gets eliminated through the process of gastric dialysis of Histamine. In a series of patients undergoing *Vamana* the comparative values were observed as below :

Histamine Dialysis through *Vamana* (Comparison between reduction of Histamine is whole Blood and Histamine expelled in total vomitus during *Vaman*)	
Total Histamine	
Estimated in Vomitus	Reduction in whole Blood
315.31 .u gm	332.50 .u gm

It was further observed that the lowering of the blood level of Histamine remained sustained for several weeks after *Vamana* therapy. Therefore it seems that *Vamana* does not only cause Histamine dialysis to washout the existing histamine from the system rather it also stabilises the histamine production mechanism. Because of biopurification of the system the need of circulating Histamine is reduced and hence the Mast Cells which release Histamine get stabilised. With the available evidences one may speculate that *Vamana therapy* has a Mast Cell Stabilising effect which may be the reason of sustained decrease of circulating Histamine as is evident from the following table :

Blood Histamine Level in μ gm/Ml (N=20)			
Blood Histamine			
Before Vamana		After Vamana	
		Just after Vamana	After one Month of Vamana
Mean ± S.D. t/p	0.495 ± 0.234 -	0.400 ± 0.206 0.94 $p > 0.05$	0.282 ± 0.136 2.55 $p < 0.05$

These humoural changes occurring after *Vamana* were found to be proportionately accompanied by symptomatic relief. The asthmatic patients reported notable relief in dyspnoea, cough and wheezing which remained sustained for several weeks as shown in following table :

Mean Days of Asthma / Week (N=20)					
Before ***Vamana***		**After** ***Vamana***			
		Ist Week	**IInd Week**	**IIIrd Week**	
Mean	3.636	2.886	2.182	1.591	
SD	± 1.529	± 1.618	± 1.816	± 1.736	
t/p	-	t=1.58 p > 0.05	t=2.874 p < 0.01	t=4.148 p < 0.001	

LEKHANA BASTI IN IHD, HYPERTENSION AND LIPID DISORDERS

As is evident from the *samprāpti* of hypertension and IHD described in Ayurveda there is definite *Kha-vaiguṇya,* i.e. angioobstructive diathesis in these diseases. Hence application of an appropriate *Saṁśodhana* i.e. purificatory therapy is essential in primary and secondary prevention and treatment of IHD and hypertension. The full *Pañcakarma* therapy may prove difficult for an average patient of IHD because of associated cardiac failure, dyspnoea, chest pain and palpitation. Hence it is considered safe to give *saṁśodhana* by a suitable *Basti karma.* In IHD and hypertension the *Vāta doṣa* plays a major pathognomonic role hence *Basti* is the specific treatment for *Vāta Duṣṭi.* Hence it was decided to study the effect of *Basti* in these patients. Besides the role of *Vāta Doṣa* in the *samprāpti* of IHD, *Meda and Kapha* too play important role in causing *Dhamanī Praticaya* and *Dhamani Kāṭhinya,* i.e. Atherosclerosis. Hence it was considered reasonable to formulate *a Lekhana Basti* for use in these patients. *Vacā (Acorus calamus)* is a classical *Lekhana* drug and its *Lekhana* effect has already been reported earlier. In the present study *a Lekhana Basti* consisting of purified *Vacā* was tried in cases of IHD. 85 patients of uncomplicated IHD and Essential hypertension were selected from Kāyacikitsā services of S.S. Hospital, BHU, Varanasi. Patients of severe Grade (Stage 3) hypertension, patients prone to MI, patients of secondary hypertension and severe associated illness viz. CHF, renal failure, heart block and hepatic failure were excluded.

After history taking and physical examination, each of these patients were subjected to investigations viz. X-ray chest, ECG, Lipid Profile, Blood sugar estimations. Blood pressure was recorded by standard methods classifying the same as per JNC-VI, 1997. After diagnosis and basal assessment the patients were subjected to a short selective *Saṁśodhana* therapy of 10-12 days duration once every three months in a year. The *Saṁśodhana* schedule consisted of *Purva Karma* i.e. *Snehana-Swedana* of 3-5 days followed by *a Lekhana Basti* for eight consecutive days. The *Basti Dravya* consisted of 225 ml. purified *Vacā Kaṣāya* plus *Tila Taila 25* ml. We opted eight days duration to follow a *Yoga Basti Karma* schedule and also to suit the convenience of the patients. This duration (8 days) was considered the sample observation time. It is not adequate therapeutic time. The 85 patients were recruited in two groups : (a) *Lekhana Basti* group (65 patients) and (b) Placebo *Basti* group (20 cases). The placebo *Basti* group received only a plain water *Basti.* The effect of trial therapy was observed on following parameters comparing the findings of Before-Treatment vs. After-Treatment level :

(1) Clinical relief by / symptom grading scale for :

1. Breathlessness
2. Precordial chest pain and
3. Palpitation.

(2) Blood Pressure and Pulse Rate

(3) Anthropometric assessment viz.

1. Ponderal Index
2. Body Mass Index (BMI)

(4) Lipid Profile

(5) Retention time of *Basti*

(6) ECG Changes

The observations made on different parameters before and after I, II III courses of *Lekhana Basti* and/or placebo *Basti* exhibit several beneficial effects in these patients in terms of symptomatic improvement and correction of blood pressure and lipid profile. Some observations are tabulated below :

Table showing Statistical significance of the effect of Basti Therapy on pulse rate and Blood pressure			
Therapy	**Pulse**	**SBP**	**DBP**
Lekhana Basti :			
1st course	t 6.52, p<0.001	t 8.66, p<0.001	t 6.08, p<0.001
2nd course	t 5.56, p<0.001	t 10.77, p<0.001	t 6.50, p<0.001
3rd course	t 2.85, p<0.001	t 5.07, p<0.001	t 3.21, p<0.001
Placebo *Basti* :	t 1.07, p>0.05	t 3.22, p<0.01	t 3.74, p<0.001
Lekhana vs. Placebo Basti :	t 1 .84, >0.05 a	1.77, p>0.05	t 0.85, p>0.05

Table showing Statistical significance of the Effect of Lekhana Basti on body weight, Ponderal Index and Body Mass Index (BMI)						
Therapy Groups	**Body Weight**		**Ponderal Index**		**Body Mass Index**	
	t	**p**	**t**	**p**	**t**	**P**
Lekhana Basti :						
1st course	4.05	<0.001	1.50	>0.05	3.23	<0.01
2nd course	5.00	<0.001	5.25	<0.001	4.85	<0.001
3rd course	1.00	>0.05	1.33	>0.05	0.52	>0.05
Placebo Basti :	0.78	>0.05	1.25	>0.05	0.6	>0.05
Lekhana vs. Placebo Basti :	2.00	<0.05	0.59	>0.05	1.69	>0.05

Table showing Statistical significance of the effect of *Basti* therapy on Lipid Profile						
Therapy Groups	**S. Cholesterol**		**S. Triglyceride**		**S. VLDL**	
	t	**p**	**t**	**P**	**t**	**p**
Lekhana Basti :						
1st course	6.36	<0.001	0.47	>0.05	0.35	>0.05
2nd course	4.79	<0.001	4.92	<0.001	5.44	<0.001
3rd couse	3.28	<0.01	3.38	<0.01	0.90	>0.05
Placebo *Basti :*	1.44	>0.05	0.91	>0.05	1.11	>0.05
Lekhana vs. Placebo *Basti :*	2.32	<0.05	0.04	>0.05	0.48	>0.05

Thus the present study has been carried out for the first time entirely from a new angle applying Ayurvedic *Saṁśodhana* approach in modification of Cardiovascular risk factors in cases of essential hypertension and IHD. In view of the possible role of *Kapha* and *Meda* as an *Āvaraṇa* over *Vyāna Vāyu* in hypertension and IHD it was considered appropriate to use a suitable *Lekhana Basti* in such cases. A therapeutic *Basti* containing the *Lekhana* drug, purified *Vacā (Acorus calamus)* when used by *Yoga Basti Karma* three times a year produced notable effect on blood pressure, pulse and lipid profile besides symptomatic relief. It may be concluded that a suitably prepared *Lekhana* Basti may be used periodically as a method of primary and secondary prevention of hypertension and IHD.

ŚIRODHĀRĀ AND NAṢYA IN TREATMENT OF HEADACHES

Śirodhārā is a traditional method of treatment where a medicated or nonmedicated liquid is slowly trickled over the forehead. This constant flow of liquid over the forehead and its touch induces a multifaceted effect in the body such as relaxation response, microvibrational effect in the skull and brain and meditative effect as well as certain drug mediated attributes. It has been experienced to be a good treatment of a range of stress related diseases like tension headache, insomnia, anxiety etc. We have successfully treated a large number of patients of this category with *Śirodhārā* and *Nasya* at *Pañca Karma* Center of the University Hospital of BHU. Some sample data is reproduced in following tables to illustrate the pattern of treatment response.

Headache is one of the commonest symptoms of a wide range of diseases both organic and functional. Headache of organic origin need treatment of the organic cause but majority of patients attending the clinics of general practitioners are of non-organic origin and are of tension type. The Tension Headache is the most common. In case of many patients because of frequent use of pain killers and occurrence of rebound headache, one finds that headache becomes a constant and continued complaint. This is popularly termed as Chronic Daily Headache (CDH). In the present study we treated a series of patients of CDH with *Śirodhārā* and *Nasya* singly and combindly and monitored the effect of treatment for several weeks. It was found

that majority of patients were benefitted during the treatment and had sustained relief as measured through symptoms grade scales and appropriate Visual Analogue Scales. These patients also showed improvement in memory, mental fatigue rate and rate of attention deficit. The following tables exhibit a sample data from this study conducted at BHU by Gupta, Rajika and Singh, R. H. (1999).

Effect of Sirodhārā and Nasya on Giddiness in Patients of Chronic Daily Headache (CDH)

Groups	Mean ± S.D. of Giddiness Scores					Paired 't'
	BT	F_1 2 Weeks	F_2 4 Weeks	F_3 6 Weeks	Difference	
Śirodhārā (n=18)	0.88 ± 0.96	0.77 ± 0.87	0.72 ± 0.82	0.66 ± 0.76	0.22 ± 0.42	t=2.22 $p<0.05$
Nasya (n=10)	0.80 ± 0.90	0.60 ± 0.80	0.50 ± 0.70	0.40 ± 0.60	0.40 ± 0.51	t=2.48 $p<0.05$

After Rajika Gupta and R. H. Singh (1999)

Effect of Sirodhārā and Nasya on Immediate Memory Span in Patients of Chronic Daily Headache (CDH)

Groups	Mean ± S.D. of Immediate Memory Span			Paired 't'
	BT	AT	Difference	
Śirodhārā (n=18) D	4.02 ± 1.26	4.27 ± 1.07	0.25 ± 0.42	t = 2.52 p<0.05
R	2.77 ± 0.80	3.05 ± 0.72	0.27 ± 0.46	t = 2.49 p<0.05
Nasya (n=10) D	4.60 ± 0.69	4.60 ± 0.69	0	t = 0
R	2.90 ± 0.73	2.90 ± 0.73	0	t = 0

After Rajika Gupta and R. H. Singh (1999)

Effect of Sirodhārā and Nasya on Attention Fluctuation in Patients of Chronic Daily Headache (CDH)

Groups	Mean ± S.D. of Attention Fluctuation			Paired 't'
	BT	AT	Difference	
Śirodhārā (n=18)	4.66 ± 2.16	3.61 ± 1.88	1.05 ± 2.09	t = 2.14 $p<0.05$
Nasya (n=10)	4.30 ± 1.41	4.10 ± 1.28	0.20 ± 0.63	t = 1.00 $p<0.05$

After Rajika Gupta and R. H. Singh (1999)

Effect of Sirodhārā and Nasya on Pain Score by Visual Analogue Scale (VAS) in Patients of Chronic Daily Headache (CDH)

Groups	Mean ± S.D. of VAS			Paired 't'
	BT	AT	Difference	
Śirodhārā (n=18)	5.22 ± 1.26	3.72 ± 1.12	1.50 ± 1.29	t = 4.91 p<0.001
Nasya (n=10)	5.10 ± 1.37	3.80 ± 0.78	1.30 ± 1.27	t = 3.23 p<0.02

After Rajika Gupta and R. H. Singh (1999)

Effect of Śirodhārā and Nasya on Pain Score in Patients of Chronic Daily Headache (CDH)

Groups	Mean ± S.D. of Pain Score					Paired 't'
	BT	F_1	F_2	F_3	Difference	
Śirodhārā (n=18)	3.05 ± 0.58	2.50 ± 0.70	2.27 ± 0.95	2.22 ± 1.00	0.83 ± 0.93	t=3.78 p<0.01
Nasya (n=10)	3.20 ± 0.63	2.80 ± 0.78	2.65 ± 0.96	2.70 ± 0.48	0.50 ± 0.52	t=3.04 p<0.02

After Rajika Gupta and R. H. Singh (1999)

THE PŪRVA KARMAS

Snehana and *Swedana* are the classical *Pūrva Karmas* advocated to be administered as a preparatory measure before *Pañca Karma* Therapy. It may be pointed out that in addition to their role as *Pūrva Karmā* measures, *Snehana* and *Swedana* in themselves are also independent therapies for certain situations. A number of conditions may be amenable to *Snehana* and/or *Swedana* alone. Their status can be easily understood considering their inclusion in *Ṣaḍupakramas* or Six-fold classical therapies described by Caraka. *Snehana* and *Swedana* are the Two of the Six fundamental therapies of Āyurveda. Besides their important place in classical therapy, one would see that *Snehana* and *Swedana* form the basic component of total *Pañca Karma* therapy of Kerala tradition. As a matter of fact the entire Keraliya *Pañca Karma* is nothing but *Snehana-Swedana* therapy of different forms. Hence while reviewing the recent advances in *Pañca Karma* Therapy, it is essential to evaluate the work done on this aspect.

The review of research literature indicates that very little work has been done on internal *Śnehana.* Although according to classical Āyurveda internal *Snehan,* by administering pure or medicated oils and *Ghṛta* orally, is the predominent approach. But no significant attempt seems to have been made to practise or to study *Snehapāna* in recent years. Among the sporadic studies Singh and Chaturvedi, (1966) studied the effect of internal *Snehana* clinically as well as experimentally. Subsequently they treated a series of patients of hyperchlorhydria and peptic ulcer with internal administration of *Dāḍimādya Ghṛta* as a *Śamana Cikitsā.* They observed that *Ghṛtapāna* helped in significant clinical improvement in these patients including decrease in gastric acid secretion and evidence of healing of ulcers. Certain other authors also tried *Sneha pāna* in Peptic ulcer and reported similar observations. However, no conclusive studies are on record to show how exactly *Snehana* specially internal *Snehana* plays its role as *a Pūrva Karma,* neither any effort appears to have been made to standardise the process of *Sneha pāna* in terms of dosage, tolerance, metabolic effects etc.

On the other hand there have been several studies on *Snehana* used externally along with some or the other *Swedana*

procedure either as a Pūrva *Karma* or as a full independent treatment of certain clinical conditions. At most of the occasions *Snehana-Swedana* have been used in the form of *Piṇḍa Sweda* following the traditional Keraliya schedule. Most of the time this has been done in cases of chronic Rheumatoid disease or other forms of Rheumatism or in cases of paralysis more extensively in cases of Polioparalysis in children. This procedure also involves an element of physical massage in addition to the local application of oil and heat along with some medicaments. Naturally the total process being a kind of physiotherapeutic procedure, exhibits notable beneficial effects in physical ailments like arthritis and paralysis. Experiences tell that *Snehan-Swedana* in the form of *Piṇḍa Sweda* or any other such procedure do help the patients, but scientifically speaking there is hardly any report on well planned controlled study to demonstrate the effect of this treatment objectively. One of the studies supported by W. H. O. at Coimbatore conducted preliminary controlled trials of Keraliya Therapy in Rheumatoid arthritis few years back but the results were inconclusive.

We at Banaras Hindu University conducted during early seventies a similar study on the role of *Snehana-Swedana* (as *Piṇḍa Swedana)* with or without subsequent course of *Basti* in a series of patients of Rheumatoid Arthritis and other chronic arthropathies. It would be worthwhile to reproduct this study to evaluate the possible trends.

"In view of past studies and experiences it was postulated that considerable endocrine and metabolic abnormalities are associated with different types of rheumatic diseases such as local vascular insufficiency of joints, a tendency of adrenocortical deficiency and markedly increased rate of connective tissue degradation in these patients. Hence in present study attempts were made to develop a comprehensive schedule of parameters dealing with above mentioned alterations without limiting only to the clinical and symptomatic assessments. It was thought that the therapy under trial, if produces symptomatic relief, should also influence the underlying pathology to some extent. Chronic Rheumatic diseases were selected for this investigation because these patients had no problems of acute illness and *Pañca Karma* Therapy is classically indicated in these conditions.

Selective *Pañca Karma* Therapy with *Pūrva Karma* as *Piṇḍa Sweda* followed by *Vasti* Therapy was adopted in view of its simplicity of administration, possibility of good results as per past experiences and in view of similar approach in clinical practice in Kerala.

METHODS AND MATERIALS

Patients of chronic rheumatism selected from the out patient department of S. S. Hospital, Banaras Hindu University were admitted in Postgraduate Research Ward. These cases were subjected to a careful case taking and thorough physical examination following modern as well as Ayurvedic clinical methodology. Afterwards certain routine laboratory investigations on urine, stool and blood were done followed by special investigations designed for the study of the endocrine and metabolic basis of this disease such as :

1. Erythrocyte Sedimentation Rate
2. Serum electrolytes
3. Urinary corticoids
    a. 17-hydroxycorticosteroids
    b. 17-ketosteroids
4. Urinary catecholamines as VMA
5. Urinary nitrogen
6. Urinary hydroxyproline
7. Urinary mucopolysaccharides
8. Plain radiography of selected joints
9. Angiography of the selected joints.

The erythrocyte sedimentation rate was determined by Wintrobes method. 17-ketosteroids were estimated in urine as per method described by King (1964). Similarly 17 hydroxycorticosteroids were estimated as per method described by Appleby, et al. (1955). The catecholamines were assessed in terms of urinary excretion of V. M. A. Hydroxyproline was estimated in urine by the method described by Prockop and Udenfriend (1966). The mucopolysaccharides were estimated by the modified method of Rondel and Morgan (1955). Total urinary

nitrogen was estimated by usual Neslerization method. All these estimations were made in terms of their 24 hours excretion in urine.

On the basis of these investigations diagnosis was done in modern terms and the basal endocrine and metabolic state was assessed in each case. A parallel Ayurvedic diagnosis was rnade by the method described by Singh (1970) and the *Prakṛti* was determined following the criteria described by Singh and Dubey (1969). The functional status of each of these patients was assessed by the following functional tests :

1. Walking time determination by asking the patient to cover a fixed distance by walking and recording the average time taken in seconds.
2. Pressing power determination in both hands separately by asking the patient to press over the inflated sphygmomanometer scuff and recording the pressing power of the hand in mm. Hg.
3. Grip power determination in both hands separately by asking the patient to grip the inflated sphygmomanometer scuff and recording the rise in mercury due to grip power of the hand in mm. Hg.
4. Other functional tests including the record of physical status such as body weight etc.

After clinical diagnosis, special laboratory investigations and assessment of initial functional status, each patient was subjected to any one of the following randomly allocated treatments :

1. *Piṇḍa Swedan* following the classical method practised by Moose (1944).
2. *Piṇḍa Swedan* as above followed by a course of *Mātrā Vasti* using a mixture of *Nārāyaṇ Taila* and *Daśamūla Kaṣāya.*

PARAMETERS OF ASSESSMENT :

During therapy these cases were carefully watched for changes in the clinical condition specially joint pain, tenderness, stiffness, swelling and functional efficiency. Besides, the

following objective methods of assessment were periodically repeated in order to get an objective idea about the pattern of recovery : (a) Erythrocyte sedimentation rate, (b) Serum electrolytes, (c) Urinary corticoids and catecholamines, (d) Urinary hydroxyproline and mucopolysaccharides, (5) plain radiography and angiography of joints, (6) Functional Tests viz.

Walking time, Pressing power and Grip power.

These cases were kept in the hospital for varying periods depending upon the condition of the individual patient. In the end the results were categorized as follows :

1. Relieved : All those cases who became symptom free except for minor bony deformities and residual stiffness and who could be sent on duty, were taken as relieved. Complete absence of pain, tenderness and swelling were the main criteria for this category. Ofcourse they had comparable evidence of recovery in laboratory findings and functional tests too.
2. Improved : All those patients who showed recordable decrease in pain, tenderness, swelling and stiffness but were not completely free from these symptoms, were categorized as improved. Depending upon the degree of symptomatic relief, changes in laboratory findings and functional recovery the improved cases were categorized as (a) Improved (+), (2) Improved (++) and (3) Improved (+ + +).
3. Unchanged : Such cases who neither showed symptomatic improvement according to the patient's version nor could show evidence of objective recovery in terms of laboratory findings and functional tests, were taken as unchanged.
4. Incomplete : Such cases who were registered and were taken under trial for few days but could not continue under the trial for objectively assessable period, were taken as incompletely studied cases and were separated from the study.

After treatment and assessment on the above lines these patients were either kept in the ward for observation of

convalescence or were discharged from the hospital with adequate arrangements for follow up studies.

As mentioned earlier, out of 20 cases of chronic rheumatism studied in the present series 15 patients were treated by *Piṇḍa Swedan* alone while remaining patients were given a course of *Mātrāvasti* following a preliminary course of *Piṇḍa swedan.* The usual course of treatment was 4 weeks of *Piṇḍa swedan* in those cases where *Piṇḍa swedan* was the only treatment. In the other group 2 weeks preliminary *Piṇḍa swedan* plus 15 days *Mātrā vasti* formed the total treatment. The effect of the treatment assessed on the parameters as described earlier is described hereunder.

CLINICAL RECOVERY

The day to day check-up of the patients showed that simple *Piṇḍa swedan* could induce notable relief in pain, tenderness, stiffness and swelling of joints. These patients reported satisfactory improvement on these clinical aspects within a week of starting the treatment. The improvement was found progressing as the days of treatment passed. The most striking improvement was found in the form of relief of stiffness. Relief in pain, tenderness and swelling was notable but was not very striking. No significant further improvement was noted on addition of *Vasti* therapy. These patients reported a feeling of well being, lightness in the body, improvement in bowel function in addition to the proportional relief in the rheumatic complaints. There was a statistically significant ($p < 0.001$) gain in body weight during and after therapy in these patients (Table 1).

FUNCTIONAL RECOVERY

The recovery of these patients was assessed in functional terms by recording (1) walking time, (2) grip power and (3) pressing power in both hands. These objective methods revealed significant improvement under the influence of the therapy given. The average pretreatment walking time in the present series of patients was 58.40 ± 31.05 seconds for the particular distance. The weekly check-up during the therapy showed a progressive and significant fall in walking time. The average fall in walking time was 19.7 percent at first assessment, 39.7 percent at second assessment, 46.3 percent at third assessment and 41.6

percent at the 4th assessment. Ofcourse there was wide individual variation in different cases. However the improvements were statistically significant (Table 2, Fig. 1).

Similarly the average grip power in hands of the patients selected in the present series before starting the therapy was 118.40 ± 57.56 mm Hg. Similar to changes in walking time our patients showed statistically significant ($p < 0.05$) restoration of grip power in both hands when rechecked at different intervals during the therapy. We found this procedure to be a very dependable method for assessment of recovery of upper extremities and given a little care there was no chance of error. The average increase in grip power was 15.7 percent, 27.7 percent, 30.3 percent and 43.9 percent as recorded at I, II, III and IV terms of assessments respectively (Table 3, Fig. 1).

The pressing power was measured as a corroborating factor to grip power records. The pattern of recovery was similar. The average pre-treatment pressing power was 108 ± 29.94 mm. Hg. It was 120.4 ± 46.73, 129.4 ± 45.90, 133.6 ± 51.74 and 152.5 ± 71.15 when measured during the therapy at I, II, III and IV intervals respectively. Here again individual variations were wide but degree of recovery was highly significant ($P < 0.001$) (Table 4, Fig. 1).

RECOVERY IN E. S. R.

Rise in Erythrocyte Sedimentation Rate is an important change commonly occuring in the cases of different types of rheumatism. E. S. R. is considered an easily detectable index of disease activity and so it is worthwhile to study E. S. R. as an index of inhibition and/or progression of the disease. Accordingly we noted a significantly raised Erythrocyte Sedimentation Rate in our cases. The average E. S. R. before starting the treatment in the present series was 41.70 ± 11.36 mm. at the end of first hour of Wintrobe. We noted a significant ($p < 0.05$) fall in E. S. R. in these patients after the treatment. The average post-treatment E. S. R. in these cases was 31.57 ± 13.90 mm. at the end of first hour Wintrobe (Table 5, Fig. 2).

SERUM ELECTROLYTE CHANGES

The serum electrolyte changes could be studied only in a few cases, The object and significance of electrolyte pattern

PATTERN OF FUNCTIONAL RECOVERY & BODY WEIGHT CHANGES DURING THERAPY

MEAN VALUES IN 20 CASES - CHANGES STATISTICALLY SIGNIFICANT

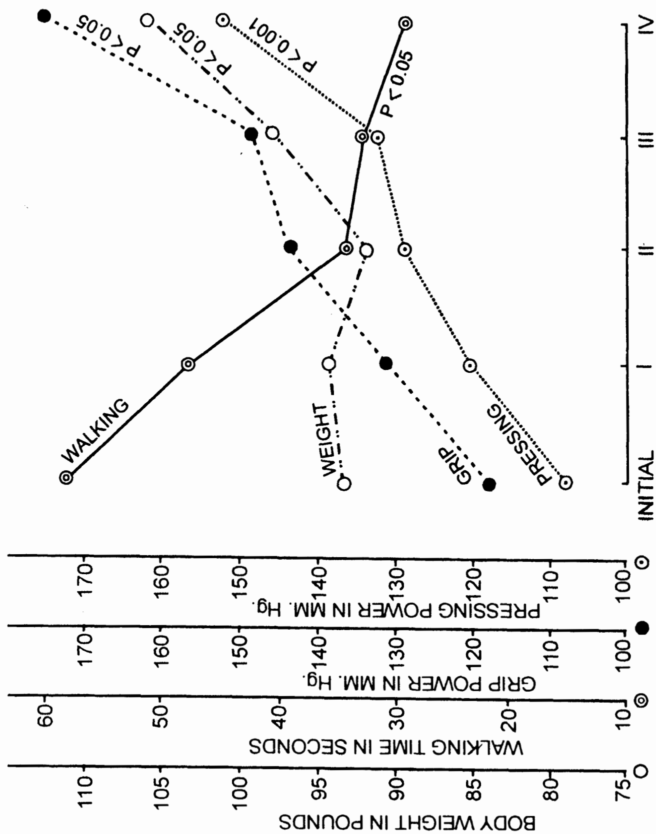


FIG. 1

E. S. R. CHANGES BEFORE AND AFTER THERAPY

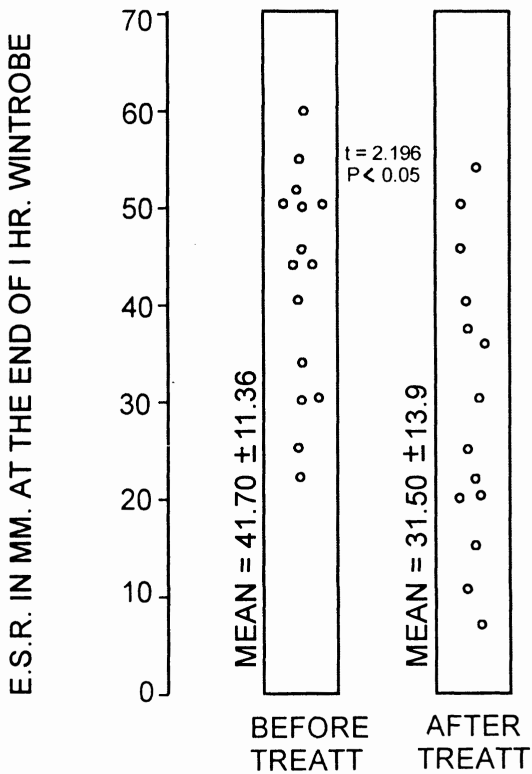


FIG. 2

studies in relation to *Pañca Karma* therapy has been pointed out elsewhere. However the average serum sodium, potassium and chloride in these patients before treatment were 1234 ± 3.2, 4.61 ± 0.61 and 89.60 ± 11.50 mill. equivalent per litre respectively. The average post-treatment electrolytes studied in these cases showed sodium 128.9 ± 6.5, potassium 5.73 ± 2.04 and chloride 97.10 ± 5.21 mil. equivalent per litre. Thus there was a trend of increase in serum electrolytes but the figures were statistically not significant (Table 6). Probably larger number of patients with more frequent studies might be required to reveal conclusive data on this issue.

CHANGES IN CONNECTIVE TISSUE METABOLISM

Rheumatism is a disease of connective tissue system. Any progression of the disease or its recovery reflects in connective tissue breakdown. In view of this fact we studied the urinary excretion of hydroxyproline the chief component of collagen and the excretion of mucopolysaccharides. The average urinary hydroxyproline before treatment in these cases was 72.60 mg per 24 hours. After treatment the average hydroxyproline excretion rate showed a decreasing trend. Similarly average urinary mucopolysaccharides before treatment was 76.90 mg. per 24 hours and after treatment this showed a decrease. These observations again being on small number of cases do not appear conclusive. The total urinary nitrogen excretion was found increased which as would be discussed later indicates overall revitalization of the metabolism in the body (Table 7).

ENDOCRINE CHANGES

In only a few cases we could study the adrenocortical functions before and after the therapy. The investigations on adrenocortical functions included estimation of (1) urinary corticoids and (2) catecholamines. The average urinary 17-ketosteroids were 4.37 ± 1.52 mg. per 24 hours, urinary 17-OH steroids were 3.23 ± 1.77 mg per 24 hours and urinary catecholamines were 3.07 ± 1.12 mg per 24 hours as studied in the present series of cases. In few cases where before and after therapy studies were done the mean 17-ketosteroids increased from 5.22 mg to 6.15 mg and 17-OH steroids from 4.32 to 6.29 mg per 24 hours of urine. Urinary catecholamines also increased

from 3.42 to 3.79 mg. (Table 7). It could be seen that changes are interesting but they have to be interpreted with caution keeping in view individual variations and small size of the samples.

VASCULAR RECOVERY

This happens to be the most interesting aspect of the present study. As pointed out elsewhere vascular insufficiency or *Srotoduṣṭi* happens to be an important component of the pathogenesis of rheumatic diseases. Any measure improving the vascular status of involved joints is likely to induce overall recovery of joint pathology. In the present study, with the help of pre and post therapy joint angiography it has been demonstrated that *swedan* therapy produces varying degrees of recovery in vascular insufficiency of the joints to which several clinical and functional improvements can be attributed. Evidence of vascular insufficiency and reversal of such changes can be seen in Fig. 3.

GRADATION OF RESULTS

Thus on the basis of the above mentioned observations, following the criteria described earlier the overall result in these cases were categorised and in final analysis 30 percent cases got relieved, 10 percent cases got improvement (+), 25 percent cases got improvement (+ +), another 25 percent got improvement (+ + +), no case remained unchanged and 10 percent cases remained incompletely assessed (Fig. 4).

DISCUSSION

In the present study emphasis has been laid on the metabolic and endocrine response to the therapeutic measures in addition to the scientific assessment of the clinical and functional recovery. As would be seen from the data detailed earlier the results are very encouraging. Interesting and significant changes have been recorded. But in view of the small size of clinical data the results are to be interpreted with care.

However, the clinical improvement was convincing for the investigators and was satisfying to the patients. The patients reported relief in pain and tenderness. A similar study carried out by Singh (1965, 1967) also showed a significant relief on these aspects. Singh (1967) reported significantly superior results in cases of osteo-articular group of *Vāta vyādhis* as compared to

After treatment Before treatment

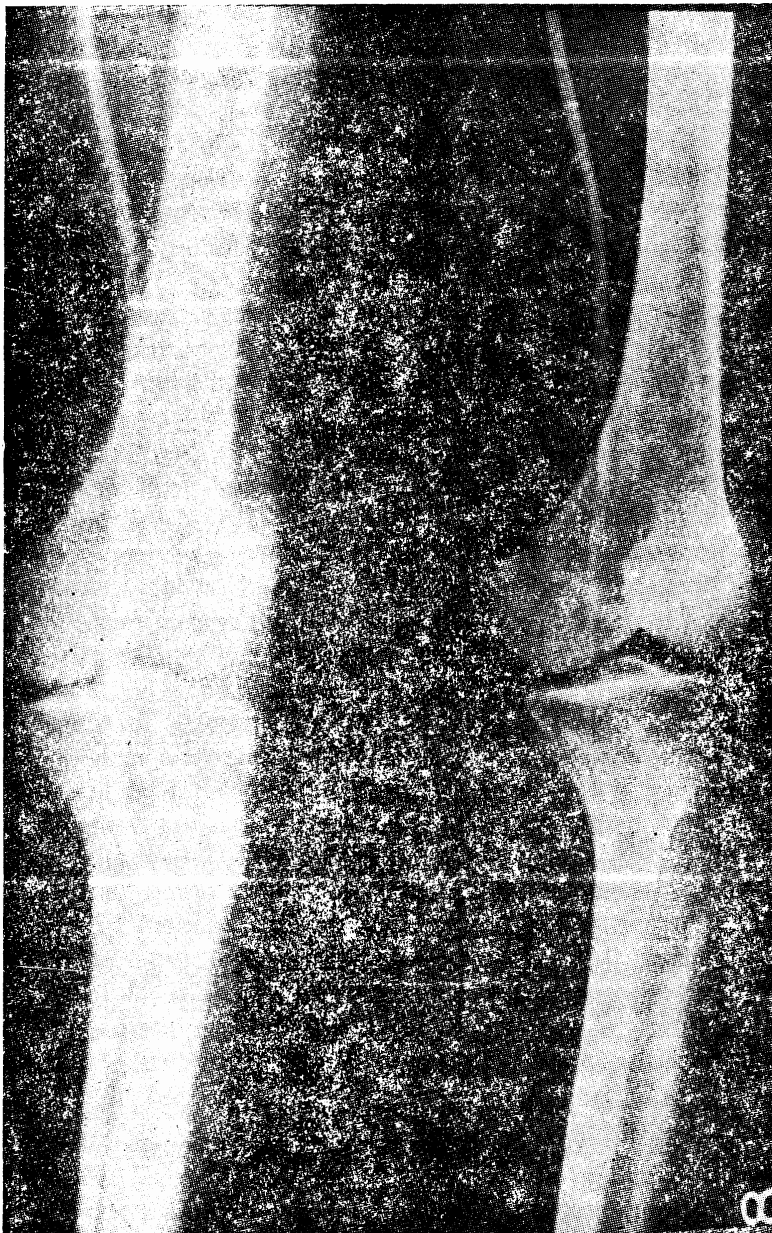


Fig. 3

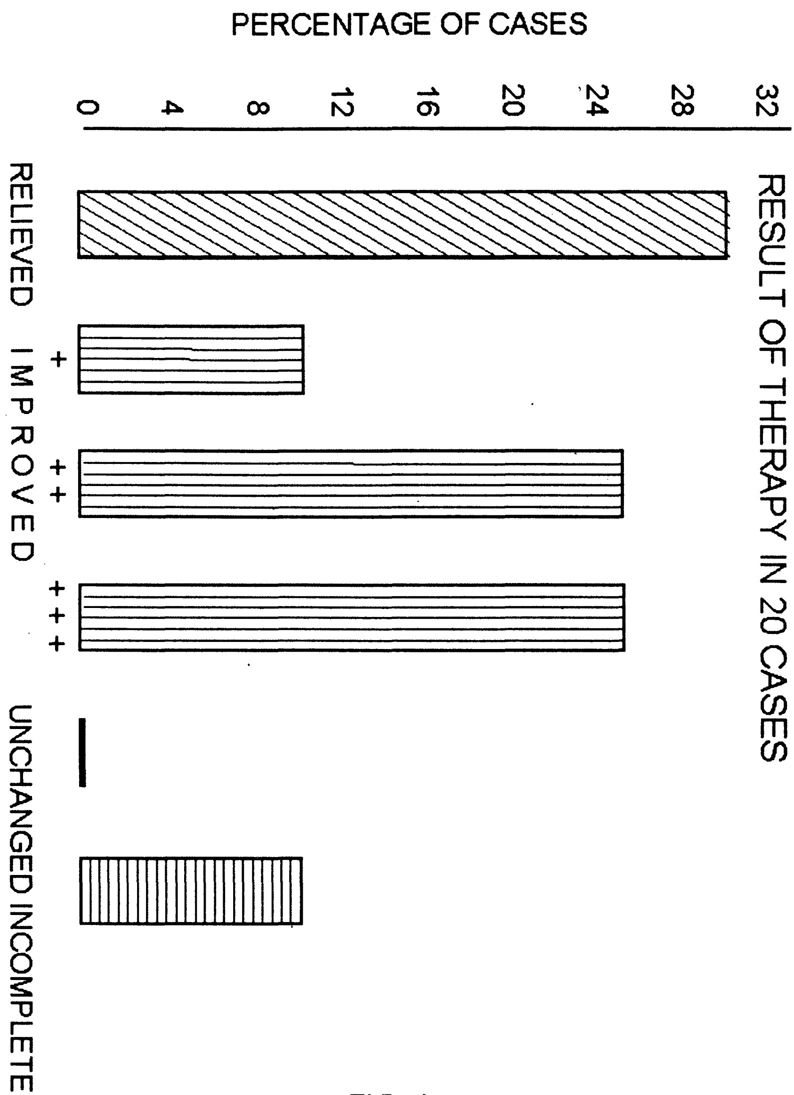

PERCENTAGE OF CASES
0
4
8
12
16
20
24
28
32
RESULT OF THERAPY IN 20 CASES
RELIEVED
IMPROVED
+
++
+++
UNCHANGED
INCOMPLETE

FIG. 4

Table-1

The body weight changes recorded before, after and during therapy in certain patients of the present series. It shows a significant increase in body weight from second term onwards.

		Body weight changes in lbs during therapy			
Analysis	Initial	Ist term	IInd term	IIIrd tem	IVth term
Mean	93.60	94.80	91.70	98.10	106.30
S.D.	± 21.11	± 21.27	± 20.07	± 16.20	± 21.53
't'	-	1	5.30	5.34	3.10
P	-	$P < 0.001$	$P < 0.001$	$P < 0.001$	$P < 0.05$
Remarks	-	N.S.	H.S.	H.S.	S.

Table-2

The changes in walking time during and after therapy showing significant functional recovery in the patients.

	Walking time in seconds during and after therapy				
Analysis	Initial	Ist term	IInd term	IIIrd tem	IVth term
Mean	58.4	48.00	34.40	32.30	29.60
S.D.	± 31.05	± 33.87	± 23.64	± 18.00	± 19.16
't'	-	6.646	4.456	3.533	4.320
P	-	P < 0.05	P < 0.05	P < 0.05	P < 0.05
Remarks	-	Significant	Significant	Significant	Significant
Percentage Decrease	-	19.7%	39.7%	46.3%	41.6%

Table-3

The changes in grip power during and after therapy showing significant increase indicating significant functional recovery in hands of these patients.

Analysis	Grip power in mm Hg. during and after therapy				
	Initial	Ist term	IInd term	IIIrd tem	IVth term
Mean	118.40	131.60	144.00	149.00	176.00
S.D.	± 57.56	± 61.20	± 70.13	± 80.07	± 92.67
't'	-	2.670	3.325	3.360	4.177
P	-	$P < 0.05$	$P < 0.05$	$P < 0.05$	$P < 0.05$
Remarks	-	Significant	Significant	Significant	Significant
Percentage increase	-	15.7%	27.7%	30.3%	43.9%

Table-4

The changes in pressing power during and after therapy showing highly significant (H.S.) increase indicating significant functional recovery in hands of these patients.

	Pressing power in mm Hg. during and after therapy				
Analysis	Initial	Ist term	IInd term	IIIrd tem	IVth term
Mean	108.8	120.4	129.4	133.6	152.5
S.D.	± 29.22	± 46.73	± 45.94	± 51.74	± 71.15
't'	-	2.68	4.32	5.24	6.58
'P'	-	P < 0.05	P < 0.001	P < 0.001	P < 0.001
Remarks	-	Significant	H. S.	H. S.	H. S.
Percentage increase	-	16.1%	22.4%	29.4%	41.8%

Table-5

Showing E. S. R. changes followng therapy in 20 treated cases of chronic rheumatism.

Observations	E. S. R. in mm Ihr. (wintrobe) Before treatment (A)	After treatment (B)
Mean	41.70	31.57
S.D.	± 11.36	± 13.90
Comparison A vs B		P < 0.05 Significant

Table-6

Showing the pattern of serum electrolyte changes in cases of chronic rheumatism undergoing therapy.

Observations	Serum electrolytes in milli eq/litre					
	Before treatment			After treatment		
Mean	Na	K	Cl	Na	K	Cl
	134.40	4.61	89.60	128.90	5.73	97.10
S.D.	± 3.20	± 0.61	± 11.50	± 6.05	± 2.04	± 5.21
't'	-	-	-	1.98	1.40	1.48
'P'	-	-	-	< 0.05	< 0.05	< 0.05

Table-7

Showing the trend of changes in certain endocrine and metabolic factors after therapy.

S. No. Observations	Before therapy	After therapy
1. Urinary Nitrogen in g/24 hrs.	14.80	18.64
2. Urinary MPS mg/24 hrs.	76.90	64.80
3. Urinary Hydroxyproline mg/24 hrs.	72.06	63.15
4. Urinary VMA mg/24 hrs.	3.42	3.79
5. Urinary 17-OH steroids mg/24 hrs.	4.32	6.29
6. Urinary 17 keto steroids mg/24 hrs.	5.22	6.15

the neuromuscular group of cases, though both types of cases had shown improvement.

It may be pointed out that *Piṇḍa swedan* which formed the major part of the therapy mainly consists of three constituents which may be responsible for its effect : (1) application of heat, (2) physical effect of massage, (3) therapeutic effect of the medicaments used therein namely the *Taila* and the *Kaṣāya*. As also reported elsewhere by Kiernander (1960), Pemberton (1955), Singh and Chaturvedi (1966, 67) and Singh (1968), the application of heat causes relaxation of the muscles and tendons, improves the blood supply and activates the local metabolic processes which are responsible for most of the relief of pain, swelling, tenderness and stiffness in rheumatic patients. Copeman (1933) regards that application of heat may cause varying degrees of general reaction which may resemble milder form of protein shock. However, *Piṇḍa swedana* includes application of heat alongwith a particular type of massage. The application of massage may cause displacement of exudates and thus may relieve tension and pain. Therefore, Stockman (1953) recommends stroking massage even in acute stage of disease. The ordinary massage is practically of no use. Massage should be directed to palpable thickness and painful regions. Routine application of heat preceding the application of massage renders the latter less painful and more effective than when heat is not applied (Kiernander, 1960).

Thus application of heat and physical effect of massage both appear to be significantly responsible for the relief produced by *Piṇḍa sweda.* Besides, the two above mentioned physical factors, the medicaments used in *Piṇḍas* and the oils used for massage may also have some role to play. According to Āyurveda these materials are *Vāta Śāmaka* but otherwise also they seem to have a lot of nutritive value which might have some restorative effect on the local tissues. Besides this, the medicaments used in the *Piṇḍas* and the oils used in massaging the patient also seem to be calculated for forming a suitable and effective medium for application of heat to the body in the process of *Piṇḍa sweda.*

As a matter of fact, no one single mechanism appears to be solely responsible. All the mechanisms mentioned might be

contributing simultaneously to different extents in the overall clinical recovery of the patient treated with *Piṇḍa sweda* process. The exact mode of effect and exact percentage contribution of each mechanism to the total relief will need further studies.

Considering this issue from Āyurvedic point of view it has to be emphasized that *Piṇḍa sweda* seems to be a classical *Vāta Śāmaka* procedure because its constituent processes viz. external *Snehana* and *Swedana* or massage and fomentation are contradictory to the effects of *Vāyu* viz., *Śeeta, Rūkṣa* etc. Moreover, the medicaments used in the process of *Piṇḍa sweda* namely the *Daśamūla Kaṣāya, Kṣīra* etc. are also anti-*Vāta* agents. And through this mechanism *Piṇḍa sweda* produces relief in all sorts of *Vātic* manifestations. *Piṇḍa sweda* has been the major part of the therapy because 75% cases were treated by *Piṇḍa swedan* alone. And the rest 25% cases who received a course of *Vasti* therapy had already received a preparatory course of *Piṇḍa sweda,* moreover additional *Vasti* therapy did not show very distinct addition of improvement.

The relief in clinical manifestations (pain, tenderness, stiffness etc.) mentioned above naturally leads to functional recovery and the patients functionally become more competent which is evident from the fall in walking time index and rise in grip power and pressing power index in our patients.

The notable changes in certain laboratory findings recorded in these studies are also in accordance with the above facts. This therapy by the same mechanisms as mentioned above controls the systemic disease process too besides its local physical effects. This leads to normalization of erythrocyte sedimentation rate as well as the rate of connective tissue breakdown as reflecting in lowered urinary excretion of hydroxyproline and mucopolysaccharides. These observations suggest that this therapy not only produces the symptomatic relief but also controls the disease process and may cause long lasting remission or relief of otherwise incurable rheumatic conditions.

The endocrine studies done in these cases in the form of urinary corticoids and catecholamines levels have shown a trend of restoration after therapy. This may be in itself an interesting and a very relevant observation but this being an observation in

only a few cases does not permit any conclusion to be drawn. However; if this trend is proved, it would indicate an improvement in the adrenocortical function which may be responsible for suppression of the rheumatic activity. However, this aspect needs further studies.

The radiological studies as such have shown nothing new to be discussed. But the angiography of the chronically ill rheumatic joints has shown evidences of vascular insufficiency. There have been increased tortuousity and narrowing of the local blood vessels due to which the joints look relatively less vascular in angiographs. An appreciable degree of vascular recovery has been noted in a few cases after therapy. This observation again being in a small number of cases needs further verification. And if this is dependably proved, our interpretations suggested earlier regarding the mode of action of these therapeutic measures are further justified.

Thus this small series of rheumatic patients studied in the present reference has been analysed entirely from a new angle. This has shown many interesting clinical and laboratory findings which throw significant light on the nature and presentation of these diseases. Similarly the therapy given to these patients has shown comprehensive effects which again has many potentialities. A further study will be fruitful.

SUMMARY AND CONCLUSIONS

1. The present study aimed to undertake a comprehensive clinical, metabolic and endocrinal study on a group of rheumatic patients and further to undertake a clinical trial of certain *Pañca Karma* therapy measures viz., *Snehana, Swedana* and *Basti* in the same group of patients with assessment on the same parameters.

2. A series of 20 patients of chronic rheumatism has been studied by usual clinical methods and common laboratory procedures. Special studies like assessment of (a) systemic metabolic status, (b) connective tissue break-down rate, (c) adrenocortical function and (d) local vascular status of the involved joints have been carried out. The above mentioned therapeutic measures have been tried on : 1. Clinical, 2. Functional, 3. Metabolic, 4.

Endocrinal and 5. Angiographic parameters. Comparisons have been made with a group of 12 normal healthy volunteers.

3. Inspite of being in a phase of chronicity all the patients showed fairly raised E. S. R. The electrolytes were normal. Urinary excretion of hydroxyproline and mucopolysaccharides was increased. Nitrogen excretion rate was lowered possibly due to generalized suppression of metabolism in the body.

4. There was slight evidence of adrenocortical deficiency in these patients.

5. A notable degree of vascular insufficiency was observed around the chronically diseased joints in most of these patients.

6. The therapy in the form of *Snehan, Swedan (Piṇḍa swedana)* and *Basti* showed significant clinical relief of pain, tenderness and stiffness in all patients taken under trial.

7. There were statistically significant ($p< 0.05$) changes in walking time index, grip power and pressing power index in these cases recorded during and after therapy which indicated significant functional recovery.

8. The laboratory studies showed a statistically significant ($p < 0.05$) fall in E. S. R. level in these patients after a course of therapy suggesting that the relief was associated with actual suppression of the disease process.

9. There was a decrease in the rate of urinary excretion of hydroxyproline and mucopolysaccharides after therapy. This again indicates an organic suppression of the disease process with control of connective tissue breakdown and not only the symptomatic relief.

10. There was a trend towards restoration of adrenocortical functions which might be responsible for clinical effects noted in these subjects.

11. Angiographic studies have shown a qualitative restoration of vascularity of joints after the therapy

which might be responsible for the relief in local symptoms in these patients.

12. The beneficial effects of the therapy mentioned above appear to be due to its three constituent factors : (a) application of heat (b) physical effects of massage and (c) therapeutic effects of the medicaments used viz., *Taila, Kaṣāya,* etc. These factors might be responsible for improving blood circulation and local metabolic processes causing relaxation of local structures and thus producing relief of local symptoms and functional recovery. The same mechanisms might be responsible for organic systemic recovery and suppression of disease process. According to Āyurveda these therapeutic measures are classically anti-*Vāta* agents and so relieve all *Vātic* manifestations and control the *Vātika* disease process.

THE PRADHĀNA KARMAS

As mentioned earlier *Vamana, Virecana, Anuvāsana Basti, Āsthāpana Basti* and *Śirovirecana* are the *Pradhāna Karmas* of classical *Pañca Karma.* Suśruta also includes *Rakta Mokṣaṇa* or blood letting under *Pañca Karma.* These procedures have remained in much less usage as compared to *Pūrva Karma* measures. They are also not much practised in Keraliya traditions. Sometimes these procedures are used separately individually for treatment of certain conditions from therapeutic point of view. The classics prescribe a sequential administration of the entire schedule *of Pañca Karma.* This is hardly done now. Accordingly the review of research studies too reveal that there are no significant attempts to study the effect and efficacy of these practices at investigative levels. Sporadic reports are available on the use of *Vamana* therapy in cases of Bronchial Asthma with significant relief. Many physicians believe that *Vamana* has great potential in the management of Asthma; however it is contraindicated in patients having cardiac involvement which is an usual feature in many chronic asthmatics. Similarly regulated *Virecana Karma* is reported to be useful in patients of liver disease, ascites and similar other conditions. Singh Gurdip (1974) made useful studies on *Virecana*

Karma in relation to liver and lipid disorders and reported interesting data which may help in fixing standards and indications of *Virecana* as independent therapeutic measure. Similarly certain investigators studied the role of *Basti* in different conditions. But the efficacy of *Basti* has not yet been demonstrated conclusively. Recently Singh and associates studied the efficacy of *Basti cikitsā* in cases of chronic UTI and *Udāvarta* syndrome with good results. Several other short term uncontrolled studies on *Basti* therapy have been reported time to time with inconclusive results. *Śirovirecana* has been used in *Śiro Roga* like headache, sinusitis, recurrent cold, asthma etc. with good results. Similarly *Rakta mokṣaṇa* was also studied by Deshpande and associates from methodology point of view. The real scientific basis of the use of this procedure and scope of beneficial effects are yet to be demonstrated. Thus the research on *Pradhāna Karmas* lies low both in terms of quality and quantity as compared to studies on *Pūrva Karmas.*

We at Banaras Hindu University were interested in conducting studies to standardise the *Pradhāna Karma* measures on scientific parameters. The experiments done to this end on *Vamana* and *Virecana Karmas* are being reproduced here under.

Pañca Karma Therapy is a specialized method of treatment in Indian medicine. Besides the fundamental importance attached to this form of therapy, a number of clinical studies have been conducted in the recent past indicating its efficacy. The greatest problem with the practice of *Pañca Karma* therapy is the lack of uniform standards suitable for men and women of the present times. There is a need of standardizing these procedures for which certain scientific parameters will have to be developed.

The present investigation aimed to undertake an intensive clinical and laboratory study to standardize various procedures of *Pañca Karma* therapy, specially the *Vamana* and the *Virecana Karmas.* This study consists of a series of patients of chronic rheumatism made to undergo *Snehana, Swedana, Vamana* and *Virecana* in a sequence and simultaneously to undergo an intensive clinical and laboratory study with a view to assess : (1) the immediate effects of *Saṁśodhana karma* such as the time of

onset; the number of bouts (*Vega)*, the total vomitus or stools and the rate of excretion of *Kapha* like and or *Pitta* like materials during the procedures. As would also be discussed later quantitative biochemical estimation of total mucopolysaccharides and total stercobilinogen were taken as indices for the rate of excretion of *Kapha* and *Pitta* respectively during *Vamana* and *Virecana Karmas;* (2) The systemic effects of these procedures were assessed in terms of (i) clinical improvement, (ii) functional improvement, (iii) improvement in Gastrointestinal functions in terms of absorption pattern as determined by D-xylose excretion test, (iv) endocrine and metabolic functions specially the Adrenocortical functions, Electrolyte changes, Nitrogen balance and other allied functions.

MATERIAL AND METHODS :

SELECTION OF PATIENTS

For the present study 25 patients of subacute and chronic rheumatism and Bronchial asthma in the age range 34.8 ± 16.31 years both males and females were selected at random from the outpatient department and were admitted in the Āyurvedic research ward of Sir Sunder Lal Hospital, Banaras Hindu University. All these patients were carefully examined and were investigated according to a proforma prepared for the purpose. Besides clinical history and physical examinations emphasis was given on the type of *Deha-Prakṛti* of these patients and the *Doṣa-Dūṣya-Adhiṣṭhāna* pattern and the quantitative pattern of the *Doṣic* set-up in the clinical presentation of each of these patients. Besides, each patient was subjected to adequate laboratory and radiological investigations necessary for confirmation of the diagnosis of these patients.

PRELIMINARY INVESTIGATIONS

Before undergoing the purificatory measures these patients were subjected to the following investigations :

(A) Physical and Physiological :

(i) Body weight, (ii) Rate of respiration, (iii) Breath holding time, (iv) Vital capacity, (v) Blood pressure and (vi) Pulse rate.

(B) Biochemical :

(i) D-xylose excretion test, (ii) 24 hours Stercobilinogen, (iii) 24 hours urinary Nitrogen, (iv) Total serum protein, (v) Erythrocyte sedimentation rate, (vi) Serum electrolytes, (vii) Urinary 17-ketosteroids, (viii) Urinary 17-OH corticosteroids and (ix) Urinary catecholamines as VMA.

As would be discussed later the present range of investigations were undertaken in order to assess the physical, physiological, endocrine and metabolic status of the subjects selected for the present study. Standard methods were adopted for conducting the investigations as referred to in the bibliography.

PAÑCA KARMA PROCEDURES ADOPTED

After preliminary investigations each patient was made to undergo the *Pañca Karma* therapy in the following sequence. As pointed out earlier our main objective in the present study was to evaluate the procedure and the efficacy of *Vamana* and *Virecana Karmas.* In majority of our cases we discontinued the therapy after *Virecana.* We purposely did not include *Basti* and *Śirovirecana Karmas* in these patients. As far as possible we tried to adopt the classical schedule of *Pañcakarma* therapy except for minor modifications considered necessary to make the procedure simpler and convenient for the patients as well as for the managing physician. The outlines of the procedures adopted in the present investigation are described below.

The therapy started with *Snehana* induced by oral administration of pure *Ghee* (Fine *Sneha*) in the dose of 2 table spoonfuls three times a day for three days. As would be described later we could observe effects of adequate *Snehana* with this procedure.

Snehana was followed by *Swedana* in each patient which consisted of a regulated steam bath (*Sarvāṅga Vāṣpa Swedana*) with the help of a *Nāḍi yantra* continued for half an hour daily for three consequitive days. The steam bath was preceded by external oleation and massage in these subjects using a suitable medicated oil, preferably *Nārāyaṇa taila.* We found this procedure very much convenient for us as well as for the patients and we also noted desired effects of *Swedana* in all the patients with this schedule.

The patients, passed through the above mentioned preparatory procedures, were made to undergo the procedure of *Vamana.* On the day of *Vamana* early in the morning the patient was given 2 kg. of milk to drink followed by 1 kg. of sugar solution to drink after 15 minutes. This was followed by induction of *Vamana* by a single dose of *Madana phạla-Vacā-Saindhava Cūrṇa* with hot water. This *Vāmaka Cūrṇa* dose consisted of *Madana phala* 6 gṃs, *Vacā 3* gms and *Saindhava* 1 gm. This could induce spontaneous vomiting within 16 to 20 minutes. We proposed to administer *Yaṣṭi Madhu Phāṇṭa* approximately 8 ounces in a single dose as an adjunct procedure to induce vomiting where the original procedure with *Madana Phala Vacā-Saindhava Cūrṇa* failed. The cases where both these procedures failed a Ryles' tube aspiration for mechanical stomach wash was proposed as an alternative. However, in none of our cases these alternatives were required. We could achieve adequate *Vamana* in the first attempt with single dose of *Madana Phala-Vacā-Saindhava Cūrṇa.*

During the process of *Vamana* the following observations were made (i) Time of onset, (ii) Number of bouts *(Vega),* (iii) Volume per bout *(Vega),* (iv) Total volume of the vomitus, (v) Colour, consistency, pH, specific gravity and other physical characters of the vomitus, (vi) The total mucus content of the vomitus quantitatively determined in terms of total mucopolysaccharides estimated as hexosamine by the method of Rondel and Morgan (1955), (vii) Immediate systemic effects like changes in pulse rate, respiration rate and blood pressure etc.

After *Vamana* these patients were given a, short course of *Saṁsarjana Krama.* We did not strictly stick to the usual. *Saṁsarjana Krama* of *Peyā 3 Kāla*, *Vilepī 3 Kāla*, *Yūṣa 3 Kāla*, and *Sāmānyāhāra* 4 *kāla* in our cases. We found a *Kṛśarā* diet for subsequent 2-3 days as good as any kind of *Saṁsarjana Krama* regime. This was extremely convenient for the patients as well as for the management.

This was followed by a course of *Virecana.* For this the patients were giṿen *Āragvadhādi Kvātha 5 Tolas* with *Eraṇḍa Taila 2 Tolas* combined in a single dose in the morning. Usually this resulted into 4-6 loose motions within 1 to 2 hours. In few

cases we did not find adequate *Virecana* with this procedure. We proposed to administer *Nārāca Rasa* in the dose of 2 *Rattis* in addition to the original *Recana (Āragvadhādi-Eraṇḍa Sneha yoga)* in cases where the original procedure failed. During the procedure of *Virecana* the following observations were recorded : (i) time of onset, (ii) number of motions, (iii) approximate volume of each motion, (iv) total volume, (v) colour, consistency, pH and other physical features of the stools and (vi) total stercobilinogen content.

The successful *Virecana Karma* in each patient was followed by a short course of *Saṁsarjana Krama* as mentioned in relation to *Vamana.* In majority of cases we discontinued the therapy after *Virecana* and its *Saṁsarjana Krama.* This was followed by a series of laboratory investigations in order to assess the effects of the *Saṁśodhana Karma* administered through the preceding *Snehana, Swedana, Vamana* and *Virecana.* The *post-Saṁsodhana* investigations consisted of (i) Body weight, (ii) Vital capacity, (iii) Breath-holding time, (iv) Respiration rate, (v) Blood pressure, (vi) D-xylose excretion test, (vii) Serum electrolytes, (viii) Serum proteins, (ix) Urinary nitrogen, (x) Urinary 17-ketosteroids, (xi) Urinary OH-Corticosteroids, (xii) Urinary V. M. A., (xiii) Clinical observations.

PARAMETERS OF ASSESSMENT

As also discussed elsewhere, our main objective in the present study was to standardize the *Vamana* and *Virecana Karmas* in clinical subjects.

This consisted of the following steps :

1. Selection of *Śodhana* drugs
2. Determination of dosage schedule
3. The method of administration
4. The degree of *Vamana* and *Virecana* effects.
    a. Number of bouts (*Vega)* produced
    b. Total volume/wt. of vomitus/stool produced
5. The quantitative determination of the effectiveness of these procedures :
    a. Rate of elimination of *Kapha* during *Vamana.*

This was determined quantitatively in terms of total mucus expelled during *Vamana*, its quantitation index being the total mucopolysaccharide content of the vomitus estimated as per method of Rondel and Morgan (1955).

b. Rate of elimination of *Pitta* during *Virecana.* This was determined in terms of total stercobilinogen content of the stools obtained during *Virecana.*

6. Clinical assessment of the Immediate systemic effects of *Vamana* and *Virecana Karmas* such as pulse, respiration, blood-pressure, etc.

7. Delayed beneficial effects of *Saṁśodhana Karma* assessed in the following terms :

a. Improvements in gastro-intestinal absorption capacity in terms of D-xylose excretion test.

b. Certain endocrine and metabolic changes.

c. Clinical recovery from the disease and functional restoration by measuring :

i) Vital capacity and Breath-holding time.

ii) Tests for functional efficiency in limbs viz. walking time, pressing power and grip power in hands.

RESULTS AND OBSERVATIONS

Snehapāna in the doses that we have used appears to produce optimum *Snehana* effects without any obvious untoward or undesirable effect except *Hrillāsa* or nausea and some other similar effects in some patients, felt during and immediately after *Snehapāna* (Table 1). We did not observe clearly noticeable smoothness and oleousness of the body skin as emphasised in Āyurvedic literature during *Sneha Karma.* Similarly no significant changes were observed as regard to appetite and digestion in these patients. Very few patients showed oleousness of stools. However, the dose that we have used appear optimum and does

not show undesirable effects and thus is advisable for routine *Pūrva Karma* procedure during *Pañca Karma* therapy.

The generalised *Vāṣpa Swedana* as practised by us is suitable and effective procedure for this purpose. Generally for preparatory purposes our patients received whole body *Vāṣpa Swedana* for three consequitive days. This *Swedana* produces a number of subjective and objective changes in the body as described in table 2. However, these patients reported definite relief in pain, stiffness and swelling of joints in addition to generalised feeling of well being and lightness in the body.

We could succeed in inducing *Vamana (Samyaka Vamana)* in all our patients with the method described above. The average time of onset of *Vamana* was 10 to 15 minutes after administration of the *Vāmaka Yoga.* The average number of bouts *(Vega)* in the present series was 6.60 ± 2.06. The total quantity vomited after a single dose was 1432 ± 565 ml. The mean pH of vomitus was found to be 6.00 ± 0.82. The presence of mucus and bile in the vomitus varied from patient to patient. However, the quantitative determination of mucus in terms of total mucopolysaccharides (MPS) content of the vomitus as an index of the rate of elimination of *Kapha* showed 981 ± 496 mg. mucopolysaccharides in the total vomitus. Thus a standard *Vamana* in a single dose as described by us should be able to produce 6.60 ± 2.06 bouts leading to 1432 ± 565 ml. vomitus containing 981 ± 496 mgs, of mucopolysaccharides (Table 3, Figs 1-4).

Besides, while undergoing *Vamana* these patients showed certain systemic physiological changes (Table 3) such as. increase in pulse rate (23.36 ± 12.20 percent), increase in respiration rate (28.40 ± 18.20 percent), increase in systolic blood pressure (7.10 ± 7.88 percent) and increase in diastolic blood pressure (1.53 ± 9.76 percent) (Table 3, Fig. 5). Thus the procedure described by us was able to induce *Samyaka Vamana.* All our patients reported relief in heaviness in chest, expectoration, cough, breathlessness etc. Almost all patients reported a feeling of wellbeing and lightness in the chest immediately after *Vamana.* We did not observe the signs of inadequate (*Asamyaka*) or excessive effect (*Atiyoga*) or any complication (*Vyāpada*) of *Vamana* in the present series.

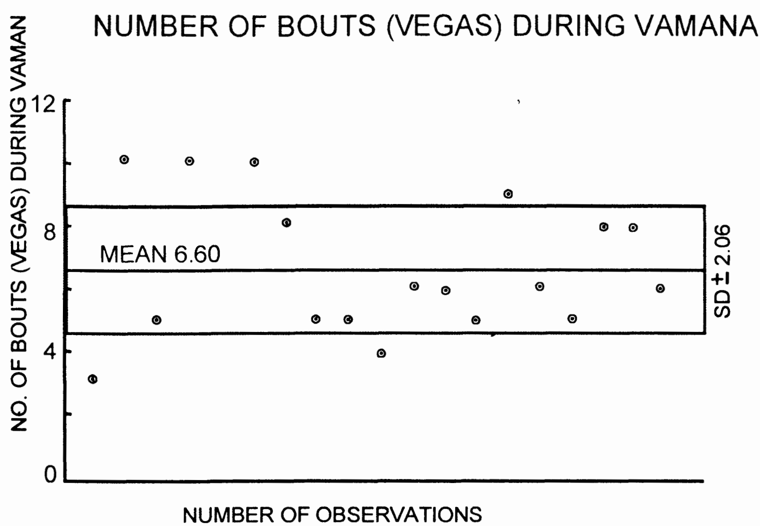

NUMBER OF BOUTS (VEGAS) DURING VAMANA
NO. OF BOUTS (VEGAS) DURING VAMAN
12
8
4
0
MEAN 6.60
SD ± 2.06
NUMBER OF OBSERVATIONS

FIG. 1

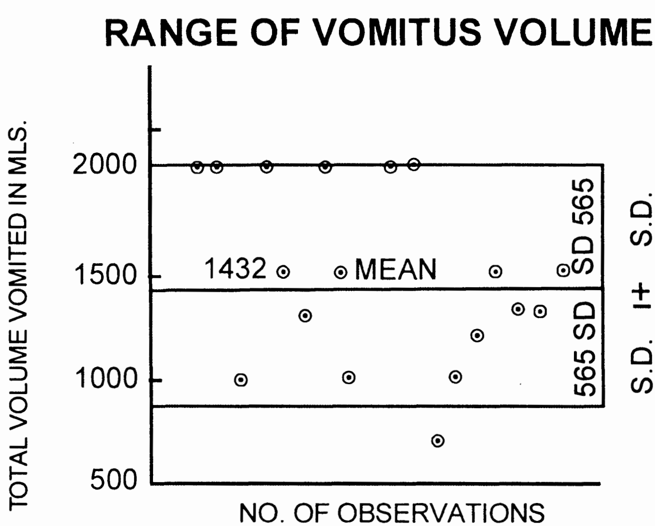

RANGE OF VOMITUS VOLUME
TOTAL VOLUME VOMITED IN MLS.
2000
1500
1000
500
1432
MEAN
SD 565
565 SD
S.D. ± S.D.
NO. OF OBSERVATIONS

FIG. 2

RANGE OF pH OF VOMITUS

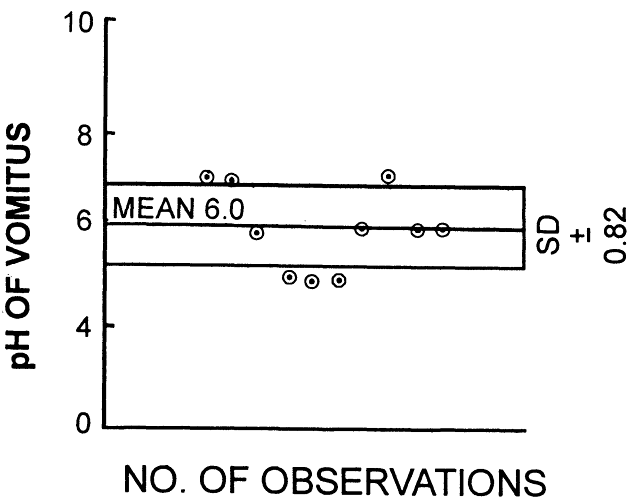


FIG. 3

RATE OF ELIMINATION OF KAPHA DOṢA DURING VAMANA IN TERMS OF TOTAL MUCOPOLYSACCHARIDE CONTENTS OF VOMITUS

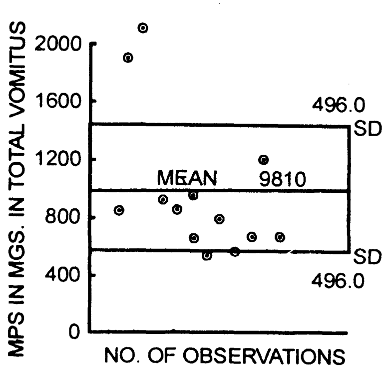


FIG. 4

SYSTEMIC CHANGES DURING VAMANA

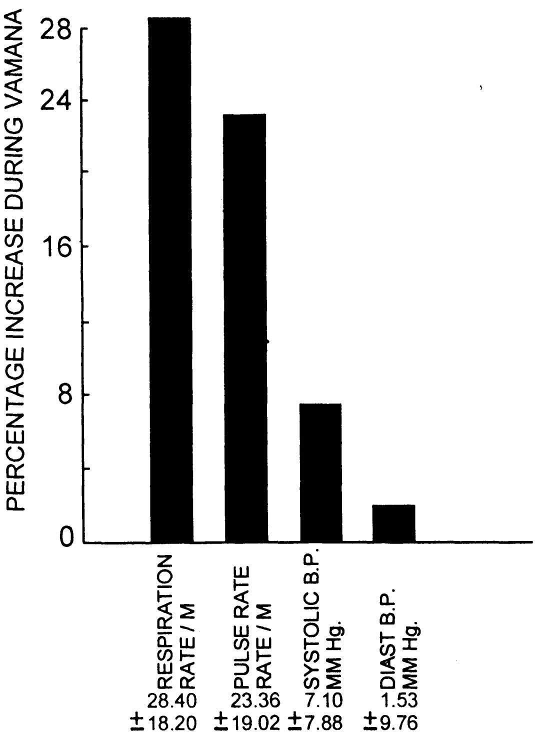


FIG. 5

The *Virecana* produced by *Āragvadha-Eraṇḍa Sneha Yoga* as mentioned earlier, could produce on average 3.70 ± 1.64 motions within 1 to 3 hours of administration of the *Virecana* dose. The total quantity of stools produced by the *Virecana Karma* varied between 0.75 to 1.00 kg. Some of the patients showed presence of bile visible from naked eye but none of them showed presence of blood. Mucus was also present in varying degrees in the stool. The quantitative determination of stercobilinogen content of the total stools produced by the *Virecana* dose was 20.70 ± 4.50 mg which was considered an index of the rate of elimination of *Pitta Doṣa.* Thus according to

standards observed in the present studies an average *Virecana* should produce 4 to 5 motions within 1 to 3 hours leading to about 1 kg. stool containing over 20 mgs. of stercobilinogen (Table 4, Fig 6 and 7). In the present studies we did not observe any obvious systemic effect in the body produced by *Virecana Karma.* Moreover none of these patients complained of pain, gripping or any other similar untoward effect. In some patients the number of motions *(Vega)* were inadequate but none of them showed absence of *Virecana* effect. However, the important *Saṁśodhana* effects as observed in the present studies are summarized in *Table 5.*

DELAYED EFFECTS OF SAṀŚODHANA

After completing the total procedure that is *Snehapāna* for 3 days, *Sarvāṅga Vāṣpa Sveda* for next 3 days, *Vamana, Virecana* and *Saṃsarjana Krama* as mentioned above, within a week, these patients were re-evaluated regarding their physical, physiological and biochemical status on the same parameters as described earlier. We could not include all our patients in the final evaluation programme due to some unavoidable reasons.

These patients within the period of observation (within 7 days after *Saṁśodhana)* showed a minor increase in the body

NUMBER OF MOTIONS (VEGAS) DURING VIRECANA

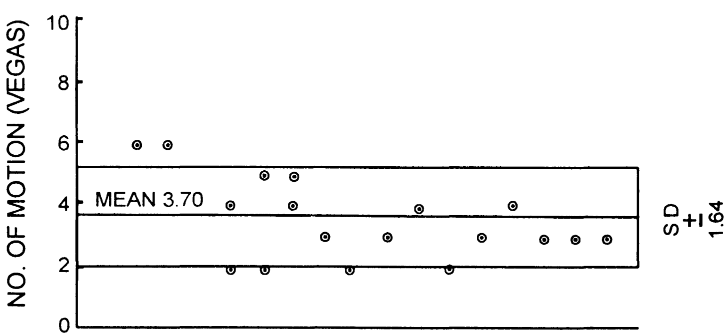


FIG. 6

RATE OF ELIMINATION OF PITTA DOṢA DURING VIRECANA KARMA IN TERMS OF STERCOBILINOGEN

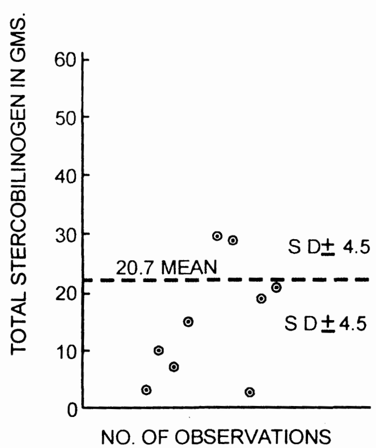


FIG. 7

weight, i.e. 0.9 ± 2.1 kg., the difference being statistically insignificant. All our rheumatic patients showed notable functional improvement in terms of decrease in walking time, increased grip power and increase in pressing power in both hands ($p < 0.05$). Similarly our Asthmatic group of patients showed an increase in the vital capacity and breath holding time with statistically significant differences ($P < 0.05$). The actual data is displayed in Table 6 and Fig. 8-11.

The laboratory investigations conducted on these patients before and after therapy showed a statistically significant ($P < 0.001$) increase in D-xylose excretion rate indicating that there was a significant improvement in the Gastrointestinal absorption capacity *(Table 7, Fig. 12).*

Though changes on different metabolic parameters were statistically insignificant, generally urinary nitrogen excretion was found increased, E. S. R. was decreased and serum electrolytes, serum protein and haemoglobin levels remained unchanged *(Table 7).*

In endocrine studies the urinary VMA was found increased while the urinary corticoids did not show consistent changes *(Table 7 Fig 12-15).*

IMPROVED RESPIRATORY FUNCTIONS AFTER SAṀŚODHANA KARMA

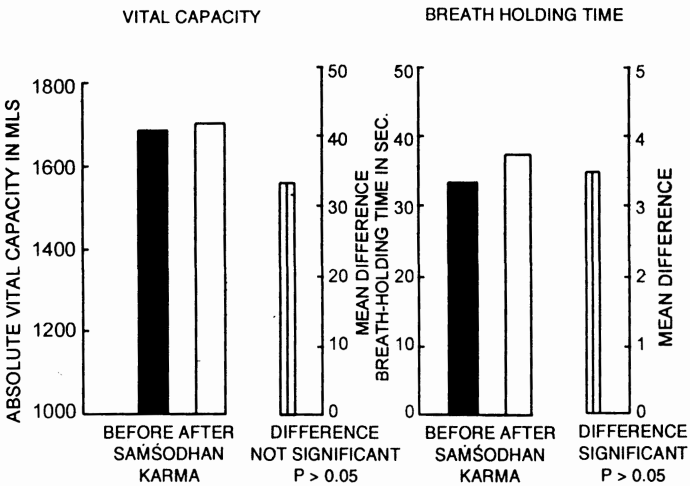


FIG. 8

FUNCTIONAL IMPROVEMENT AFTER SAṀŚODHANA KARMA IN TERMS OF BODY WT. (+) & WALKING TIME (-) CHANGES

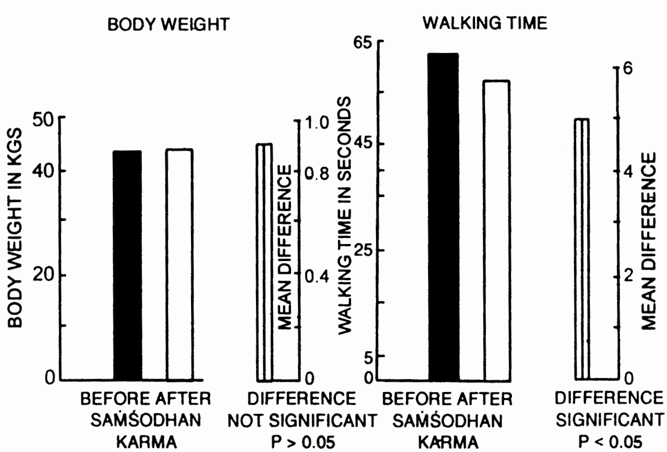


FIG. 9

FUNCTIONAL IMPROVEMENT AFTER SAṀŚODHANA KARMA IN TERMS OF INCREASED GRIP POWER IN BOTH HANDS

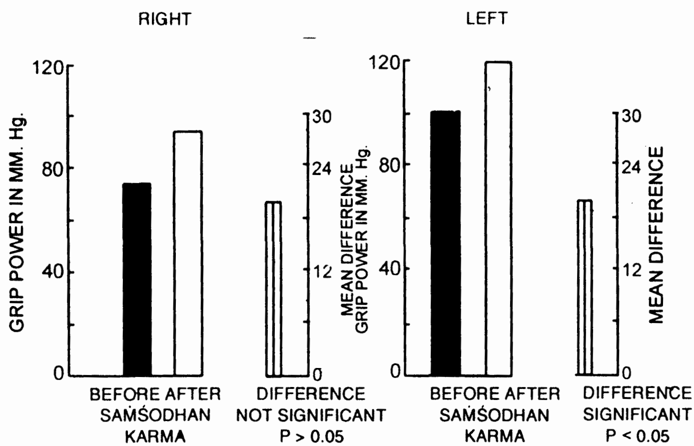


FIG. 10

FUNCTIONAL IMPROVEMENT AFTER SAṀŚODHANA KARMA IN TERMS OF INCREASED PRESSING POWER IN BOTH HANDS

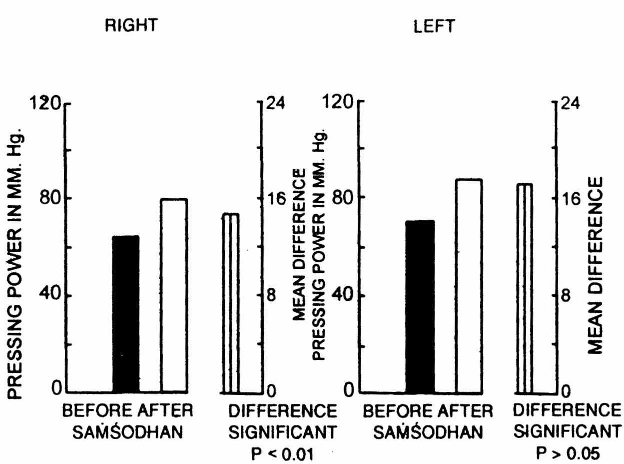


FIG. 11

IMPROVED ABSORPTION PATTERN AFTER SAṀŚODHANA KARMA

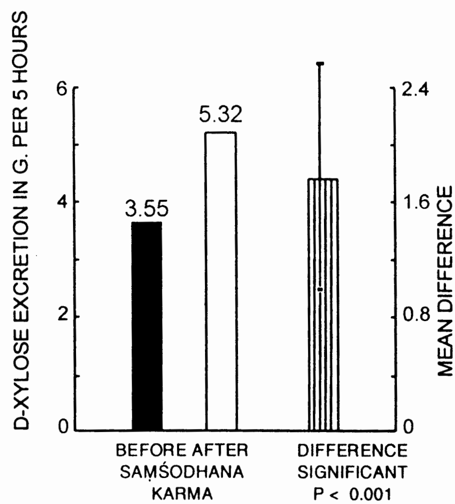


FIG. 12

INSIGNIFICANT ELECTROLYTE CHANGES AFTER SAṀŚODHAN KARMA

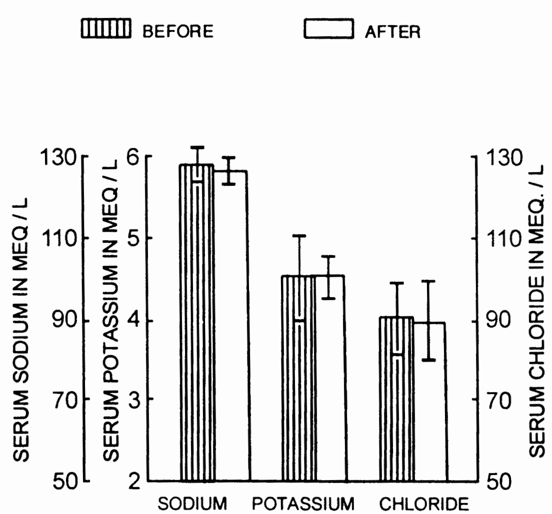


FIG. 13

ADRENOCORTICAL FUNCTIONS BEFORE & AFTER SAṀŚODHANA KARMA

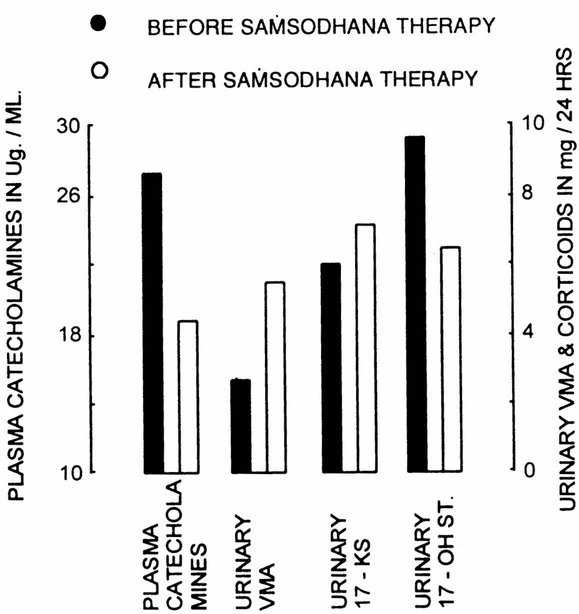


FIG. 14

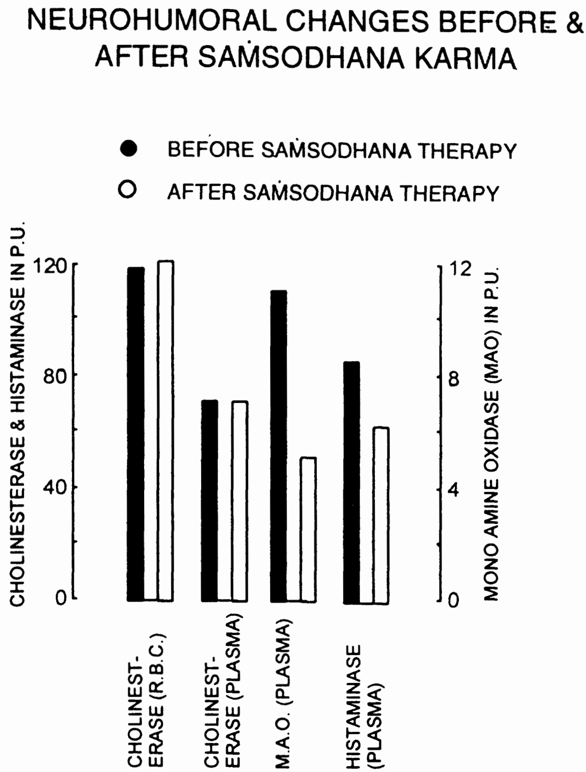

NEUROHUMORAL CHANGES BEFORE & AFTER SAṀSODHANA KARMA
● BEFORE SAṀSODHANA THERAPY
○ AFTER SAṀSODHANA THERAPY
CHOLINESTERASE & HISTAMINASE IN P.U.
120
80
40
0
12
8
4
0
MONO AMINE OXIDASE (MAO) IN P.U.
CHOLINEST-ERASE (R.B.C.)
CHOLINEST-ERASE (PLASMA)
M.A.O. (PLASMA)
HISTAMINASE (PLASMA)

FIG. 15

Table-1

Showing the subjective changes observed in the present series of patients during and immediately after preparatory *Snehana*.

S. No. Observations	Number of patients	Percentage
1. Nausea	2	10
2. Vomiting	1	05
3. Loss of appetite	2	10
4. Loose motions	1	05
5. Oleus motions	4	20
6. Good motions	4	20
7. General smoothness of skin	2	10
8. Indigestion	2	10
9. Flatulance	4	20
10. Salivation	6	30
11. Clinical relief in symptoms	1	05

Table-2

Showing the subjective changes observed in the present series of patients recorded after *Pūrvakarma* i.e. after *Svedana*.

S. No. Observations	No. of Patients reporting	Percentage
1. Lightness in the body (varying degrees)	12	60
2. Relief in stiffness (varying degrees)	20	100
3. Improved digestion (varying degrees)	02	10
4. Relief from pain in joints (varying degrees)	20	100
5. Relief from swelling in joints (varying degrees)	10	50
6. Relief in respiratory symptoms (varying degrees)	06	30

Table-3

Showing the immediate effects of *Vamana*

S. No. Observations	No. of observations	Mean ± S.D.	
		Absolute	Percentage
1. Increase in Pulse Rate/min.	19	17.0 ± 14.7	13.36 ± 12.20
2. Increase in rate of Resp./min.	19	7.21 ± 4.33	28.40 ± 18.20
3. Increase in systolic B.P. mm Hg.	18	8.60 ± 9.37	7.10 ± 7.88
4. Changes in diastolic B.P. mm Hg.	19	1.05 ± 7.33	1.53 ± 9.76
5. No. of bouts *(Vega)* of *Vamana*	19	6.60 ± 2.06	-
6. Total quantity vomited in ml.	10	1432 ± 565	-
7. pH of vomitus.	10	6.00 ± 0.82	-
8. Presence of mucus *(Kapha)*	20	(+) to (+++)	-
9. Presence of bile *(Pitta)*	20	(-) to (++)	-
10. Total quantity of mucus (in terms of total mucopolysacharides expelled during *Vamana* in mg.	13	981 ± 46	-

Table-4

Showing the immediate effects of Virecana.

S. No. Observations	No. of observations	Mean ± S.D.
1. Number of motions	18	3.70 ± 1.64
2. Quantity of stools in kg.	21	0.75 ± 1.00
3. Presence of bile	21	(-) to (++)
4. Presence of blood	21	Nil
5. Presence of mucus	21	(-) to (++)
6. Total stercobilinogen excreted in mg.	21	20.70 ± 4.50

Table-5

Summarizing the salient *Saṁsodhana* effects observed in the present study.

S. No. Observations	*Vamana* Mean ± S.D.	Virecana Mean ± S.D.
1. Number of bouts/motions *(Vega)*	6.60 ± 2.06	3.70 ± 1.64
2. Total quantity vomited/purged in ml/kg.	1432 ± 565	0.75 ± 1.00
3. Rate of *Kapha/Pitta* elimination in terms of MPS/Stercobilinogen in mg.	981 ± 496	20.70 ± 4.50

Table-6

Showing certain physical and physiological changes observed after completing the total therapy.

S. No. Observations	No. of obser-vations	Mean Initial	Mean after treatt.	Mean diff. ± S.D.	Comparison t	Comparison p
1. Body wt. in kg.	17	43.90	44.80	0.9 ± 21.0	1.69	0.0
2. Walking time in sec.	14	62.10	57.10	5.0 ± 19.7	< 1	0.0
3. Grip power in mm Hg.						
(i) Rt. hand	13	79.10	98.8	19.7 ± 39.6	1.80	> 0.05
(ii) Lt. hand	13	99.60	118.4	18.8 ± 30.8	2.20	< 0.05*
4. Pressing power in mm Hg.						
(i) Rt. hand	15	64.50	79.3	14.8 ± 17.0	3.38	< 0.05*
(i) Lt. hand	15	70.00	87.3	17.0 ± 15.1	4.35	< 0.05*
5. Vital capacity in cc	13	1677.00	1708.00	31.00 ± 246.2	< 1.0	0.05
6. Breath-holding time sec.	15	33.21	36.70	3.46 ± 4.8	2.79	< 0.05*

*Significant at 5% level.

Table-7

Showing certain biochemical changes after the total therapy.

S. No. Observations	No. of observations	Initial Mean Value	Final (after TT.) Mean	Differences		
				Mean ± S.D.	t	p
1. D-xylose excretion in g/5 hrs.	06	3.50	5.32	1.77 ± 0.76	5.71	< 0.001
2. Serum protein in g. %	0.7	6.03	5.96	0.07 ± 0.62	< 1	>0.05
3. Urinary nitrogen, g/24 hrs.	05	6.30	11.12	4.82 ± 5.79	1.86	>0.05
4. Serum electrolytes in mEq/L : Na	17	128.4 ± 3.9	127.0 ± 3.52	1.40	< 1	> 0.05
K	17	4.53 ± 0.53	4.55 ± 0.25	0.02	< 1	>0.50
Cl	14	90.70 ± 9.16	89.80 ± 10.36	0.90	< 1	>0.05
5. E. S. R. in mm/l hr. (Wintrobe)	05	45.60	41.80	4.80 ± 8.60	< 1.24	>0.05
6. Urinary 17-Ketosteroids in mg/24 hrs.	04	5.92	7.11	1.20 ± 0.3	< 1	>0.05
7. Urinary 17-OH corticosteroids in mg/24 hrs.	0.3	9.60	6.43	SSI SSI	SSI	SSI
8. Urinary VMA in mg/24 hrs.	04	2.70	5.59	2.90 ± 5.0	1.16	< 0.05

SSi = Sample size Insufficient, TT = Treatment

DISCUSSION

The standards framed in reference to the evaluation of *Pañca Karma* therapy are described in detail elsewhere (Singh, 1973). However, emphasis has been given to the, selection of *Śodhana* drugs, their dosage, the form and mode of administration, the immediate effects of the individual procedures in relevance to the textual descriptions, and the ultimate beneficial or deliterious effects of the total procedure administered.

In *Saṃśodhana* procedures such as *Vamana* and *Virecana Karmas* the standardization of the time of onset, number of bouts or motions (*Vega*), the total excreta produced and the rate of elimination of vitiated *Doṣas* i. e. *Kapha* and *Pitta* respectively in cases of *Vamana* and *Virecana Karmas,* were considered.

Newer quantitative biochemical indices were developed for measuring the rate of elimination of *Kapha* and *Pitta Doṣas* during *Vamana* and *Virecana Karmas.* These biochemical indices were adopted in view of (i) their physicochemical similarity to respective *Doṣas* and (ii) the evidence of relief produced by a particular *Karma* proportional with the degree of elimination of the respective substance (*Doṣa* index).

On the scientific and conceptual basis described in detail elsewhere (Singh, 1973) we adopted the total Mucopolysaccharides (MPS) contents of the vomitus produced during *Vamana,* as the index of the rate of elimination of *Kapha Doṣa.* The main basis of adopting this criterion was (i) the fact that the effectiveness of *Vamana* has been found to go parallel with the amount of mucus expelled during *Vamana.* Moreover (ii) the mucus as a substance appears to have a striking resemblance to *Kapha* in view of its physical properties viz. *Guru, Śita, Mṛdu, Snigdha, Madhura, Sthira* and *Picchila.* As mucus contains a representative amount of biochemically measurable Mucopolysaccharides (MPS), we adopted the estimation of total Mucopolysaccharides contents of the vomitus to represent the vitiated *Kapha Doṣa* expelled during the procedure. There is an appropriate relationship of the effectiveness of *Vamana* with the total Mucopolysaccharides contents of the vomitus produced.

On the conceptual and scientific basis described elsewhere (Singh, 1973) we adopted the total Stercobilinogen content of the

stools produced during *Virecana* as an index for the rate of elimination of vitiated *Pitta Doṣa* during *Virecana*. Though the parallelism between the rate of excretion of Stercobilinogen during *Virecana* and the effectiveness of *Virecana*, is yet to be established. We were mainly led by the facts like (i) the striking resemblance between the physicochemical properties of bile and bile products including stercobilinogen and the *Pitta Doṣa*, such as *Snigdha, Uṣṇa, Tīkṣṇa, Drava, Amla, Sara* and *Kaṭu*; (ii) the general observation that *Virecana* leads to the elimination of the proportional amount of biliary products detectable biochemically as Stercobilinogen.

The other important aspect of the standards adopted for evaluation of *Pañca Karma* therapy was the changes in the rate of gastrointestinal absorption capacity measurable quantitatively by D-xylose excretion test.

As any kind of *Saṁśodhana Karma* is believed to effect cleansing of the channels (*Sroto Viśodhana*), we presumed that *Saṁśodhana Karmas* in general should improve the gastrointestinal absorption capacity measurable in terms of D-xylose excretion rate.

The *Pañca Karma* therapy is in principles supposed to enhance the digestion and metabolism *(Agni Vyāpāra)* as an ultimate effect. So an evaluation of the *Agni Vyāpāra* measurable in terms of gastric acidity, liver function tests, endocrine functions and certain metabolic indices namely serum proteins, urinary nitrogen and serum electrolytes; formed another aspect of the standards adopted for the standardization of *Pañca Karma* therapy.

An average standard *Vamana* was found to ensue within 10 to 15 minutes after the administration of *Vamana* dose leading to 6.60 ± 2.06 bouts (*Vega*), producing 1432 ± 565 mls. of vomitus with pH 6.00 ± 0.82 and containing 981 ± 496 mg. mucopolysaccharides, which determines the amount of *Kapha Doṣa* eliminated.

An average standard *Vamana* may produce certain transient systemic physiological effects viz. 23. 36 ± 12.20 percent rise in pulse rate, 28.40 ± 18.20 percent rise in respiration rate, 7.10 ± 7.88 percent increase in systolic blood pressure and 1.53 ± 9.76 percent increase in diastolic blood pressure.

An average standard *Vamana* should produce relief in heaviness in chest, expectoration, cough and breathlessness, a feeling of well being and lightness in the body.

An average *Virecana* produced in the present series starts within 1-3 hours of receiving the *Virecana Yoga* leading to 3.3 ± 1.64 motions with average total excrete being 0.75 to 1.00 kg. containing 20.70 ± 4.50 mgs. of Stercobilinogen which determines the amount of *Pitta Doṣa* eliminated, This *Virecana* may be enhanced by manipulating the *Recana* drug and its dosage depending upon the individual requirements.

D-xylose excretion test applied on these patients within a week of the completion of the total procedure showed a statistically significant ($P < 0.001$) increase in D-xylose excretion rate, indicating improved *absorption* power which determines the rate of *Srotoviśodhana* in these patients.

No statistically significant endocrine and metabolic changes were observed during this period of observatian (one week after *Śodhana*). However, E. S. R. was slightly decreased but the haematological picture, serum protein and serum electrolytes remained unchanged, while urinary nitrogen was found increased.

These patients showed notable degree of functional improvements recorded in terms of increased vital capacity, breath holding time ($P < 0$-05), body weight, grip and pressing power in hands ($P < 0.05$) and decreased walking time. .

Thus the present enquiry has presented a study on the subject entirely from a new angle. Newer scientific parameters have been developed for standardization of these procedures quite in accordance with the Āyurvedic descriptions. The standards suggested in this study specially regarding the determination of the rate of elimination of vitiated *Kapha* and vitiated *Pitta Doṣa* during *Vamana* and *Virecana Karma* in terms of total Mucopolysaccharides (MPS) and total Stercobilinogen excretions may form a routine method for determining the effectiveness of these *Karmas* besides the D-xylose excretion test, endocrine, metabolic and other clinical and functional tests.

SUMMARY

A series of 25 patients have been subjected to *Snehana, Svedana, Vamana* and *Virecana* in sequence. The procedures of each of these *Karmas* were standardized in terms of their immediate and delayed effects. The rate of elimination of *Kapha* during *Vamana* was measured in terms of the total Mucopolysaccharides content of the vomitus. The rate of elimination of *Pitta* during *Virecana* was measured in terms of total Stercobilinogen contents of the passed stools. The delayed effects of the total procedures were studied in terms of certain physiological, endocrine and metabolic functions and gatrointestinal absorption pattern determined by D-xylose excretion test. The suitability of the methodology used in these studies and the significance of the results is discussed.

GUIDELINES FOR STANDARD PRACTICE AND THERAPEUTIC ASSESSMENT OF PAÑCA KARMA*

दोषाः कदाचित् कुप्यन्ति जिता लङ्घनपाचनैः ।
जिताः संशोधनैर्ये तु न तेषां पुनरुद्भवः ॥

च. सू. १६/२०

Pañcakarma presents an unique approach of Ayurveda to therapy with specially designed five procedures of internal purification of the body through the gross channets like G.I. tract, Respiratory tract etc. up to the subtlest levels such as cells, molecules, cells membranes etc. Such a purification permits the biological system to return to normalcy and to rejuvenate spontaneously and also facilitates the desired pharmacokinetic effect of curative remedies administered there after. It eliminates toxins and stagnated *Malas* and metabolites trom the body, cleans the macro and micro channels, maximizes the absorption and metabolism of nutrients and drugs and helps in minimising their dose and toxicity. It facilitates the transport of ions and molecules through the cell membrane. *Pañcakarma* therapy is not only a prerequisite for all the therapeutic procedures and medications but has also a full therapy role as a promotive, preventive, curative and rehabilitative procedure.

* Contributed Singh, RH and Madikonda, PK; 2000

TOPICS CONSIDERED

BRIEF INTRODUCTION

Progress during last 100 years or so in the field of Medicine has been remarkable especially in the sphere of infectious disorders, traumatic and surgically correctable conditions. However the current healthcare system is unable to deal with chronic degenerative diseases, and has been largely unsuccessful in this area.

The report "Healthy People 2000" by US Department of Health and human service, has urged the need for investigating alternatives to current disease care approaches. It concluded by saying that health of the people should be measured by more than death rates. It comes from improved quality of life and reducing suffering, illness and disability. WHO has also stressed the need to incorporate the services of alternative systems of medicine especially in the area of chronic degenerative diseases.

The Ayurvedic Medicine is one of the oldest known medical systems of the world and is well known for its holistic approach in the management of diseases and promotion of health.

Ayurvedic therapeutics can be broadly divided into Purificatory/*Saṁśodhana* therapy and Palliative/*Saṁśamana* therapy. The former essentially comprises of *Pañcakarma* therapy.

Theory of Purification depicts an unique idea of permanent cure. No other medical system in the world propounds any theory/therapy similar to the *Pañcakarrna* therapy of Ayurveda. Despite its enormous therapeutic potential this vital area of Ayurveda has not received desired attention from research quarters. Very few centres have created clinical units for practice of *Pañca Karma* and only sporadic researeh activities have been initiated. Clinical studies conducted at these centres in the field of *Pañca Karma* show considerable variation in the procedure, precision and quality.

Hence there is an urgent need of standardizing the

classical *Pañca Karma* procedures in consideration of the need of today. The dosage schedule, procedure patterns and medicaments are to the standardized, so that an uniform system of practice may be developed to be practised at all centres. The present discussion is largely based on the works carried out at Banaras Hindu University and is aimed at providing guidelines for clinical research in *Pañca Karma* and also to lay down standard method of each therapy for clinical practice.

The task of developing guidelines for clinical research on *Pañcakarma* or to lay down standard methods was not an easy one. However it is hoped that these guidelines provide specific areas of *Pañca karma,* which will be easily followed by researchers to design, conduct and evaluate the works and thereby opening newer vistas in the understanding of this specialized therapy to the medical communities of other disciplines. Scientific research on *Pañca karma* will provide additional evidence to reconfirm its effectiveness, thereby enhancing its acceptability and utilization at global level.

The *Pañca Karma* (Five measures) play a vital role in Ayurvedic Therapeutics and has been widely recognized as a valuable means of health care and cure.

The *Pañca Karma* therapy in the present days is recategorized into Two : classical *Pañca karma* and *Keralīya Pañca karma.* The former, a true form of bio-purification is followed as per classical textual references, where as the latter is largely based on certain traditional practices in Kerala which essentially produce rehabilitative and Physiotherapeutic effect apart from biopurification.

CLASSICAL *PAÑCA KARMA*

Preparatory Procedures *(Pūrva Karma)*

Dīpana and *Pācana* → Promotion of digestion

Snehana Karma → Oleation therapy

* External oleation by oil massage
* Internal oleation orally

Svedana Karma → Medicated fomentation

Main Procedures *(Pradhāna Karma)*

1. *Vaman Karma* → Therapeutic Emesis
2. *Virecana Karma* → Therapeutic Purgation
3. *Āsthāpana Basti* → Therapeutic Enema (Predominantly Decotion based)
4. *Anuvāśana Basti* → Therapeutic Enema (Predominantly Oil based)
5. *Nasya Karma* → Errhine

Post Therapy Regimen (Paścāt Karma)

- *Sańsarjana Krama* (Post therapy dietetic regimen).

KERALIYA *PAÑCA KARMA*

1. *Dhārā Krama* → Sequential streamline medicated liquid pouring over the Head.
2. *Piṇḍa Sveda* → Medicated bolus Fomentation & massage.
3. *Anna Lepa* → Application of Medicated pastes.
4. *Śiro Lepa* → Application of Medicated pastes over the head.
5. *Kāya Seka* → Oil Bath Therapy.

Need For Standard Guidelines

- Although *Pañca Karma* therapy has been tested by thousands of years of clinical practice, appropriate scientific studies would now be useful for the rational use and further development.
- Two resolutions concerning Traditional Medicine, adopted by WHO Regional committee, urged the Member states to undertake research on evaluating the safety and efficacy of traditional medicine, based on the

concepts of both modern and traditional systems of medicine.

- Standardization of *Pañca Karma* is also essential in order to eliminate the prevailing misconception, wrong practices and false apprehensions such as -

Myths	Facts
→ It involves lot of difficulties	It is simple to perform.
→ Requires long stay in hospital	Can be also carried at out door level.
→ Involves complications	Complications are very rare & minor, easily manageable

Clinical Importance of *Pañca karma* Therapy

- The significance of *Pañca karrna* is testified by the fact that they are essentially applicable to all cases covering a wide range of preventive, curative and promotive conditions.
- Conservative management/*Śamana cikitsā* does not work adequately if *Śodhana therapy* is not preceded.
- *Pañca karma* therapy for its purificatory role is a general way of management of diseases. Therefore the procedure remains more or less same in every disease, only dose specifications alter.
- *Pañca karma* if carriecl out with due respect to the season and body constitution renders Biopurification, Immune-Potentiation and disease prevention.
- *Pañca karrna* if carried out, on regular basis helps to delay the process of Aging.
- It carries the unique idea of total disease cure. No other medical system has any such therapy at least at hypothetical level.
- It renders multiple therapeutic benefits such as,

- Effect on specific disease → Desired Benefit
- Rehabilitation/ Physiotherapy effect → Immediate Benefit

- Effect on general Immunity → Long Term Benefit

- The benefits of surgery will be very much ensured, if (preoperative procedure for elective surgery) it follows *Pañca Karma* therapy.
- *Pañca karrna* is the important Preparatory Procedure before *Rasāyana* Therapy (Rejuvenative procedures).

Despite all the above advantages, *Pañca Karma* has its limitation. The rate of suceess of therapy depends on.

- Age of the patient
- Stage of the disease
- Extent of structural damage
- Body constitution/*Prakṛti*
- Proper performance of the procedures.

GOALS AND OBJECTIVES OF THE GUIDELINES

The Goal

1) Standardization of *Pañca karma.*

To bring uniformity of the procedures as far as possible, so that repeated observations yield more or less similar results.

2) To Promote Education and clinical practice

To disseminate knowledge about *Pañca Karma* and its research to professional health workers and to bring this treatment in the mainstream.

3) To Promote Research on *Pañca Karma*

To strengthen Clinical Research on *Pañca karma* and its allied aspects.

Objectives

- To emphasize importance of preventive *Pañca karma* therapy and to lay down standards for performing *Pañca karma* in a healthy individual for ensuring long term benefit.
- To provide important areas and specific guidelines for research in *Pañca karma.*
- To identify clinical and bio-chemical parameters for

monitoring and evaluating the effect of *Pañca karma,* in various situations.

- To provide criteria for interested policy-makers to select and determine the application of *Pañca karma.*

The Guidelines are intended

- To facilitate the work of research scientists in the field of *Pañca karma.*
- For clinicians in the field of Āyurveda for routine practice.
- For those who contribute and support clinical studies in the field of *Pañca karma.*
- These guidelines can also be used by UG/PG institutions for teaching and demonstration.
- In addition, these may be useful to health authorities in providing indications for *Pañca karma* and promote the value of these procedures.
- Lastly, for those research scientists of other disciplines such as modern medicine, bio-chemistry, pharmacology and Immuno-genetics etc. who are working in the area of traditional medicine.

Important Remarks

- The need of further clinical research does not challenge the wide spread acceptance as well as the clinical effect of *Pañca karma.*
- Physicians and clinicians well versed in Āyurveda, may not require to follow the standard guidelines. The wisdom of such elite is more essential in the management of the patient, than following specific guidelines.
- Complete review of *Pañca karma* is beyond the scope of the present chaptor. The interested reader is encouraged to seek out other excellent sources of this information through various books as well as the earlier chaptors of the present book. However some of the relevant issues and standard methods will be described here.

***Pañca karma* is performed with Three main objectives**

(1) Preventive *Pañca karma* → Promoting the health of a healthy (Disease deterrent bio-purification).

(2) Curative *Pañca karma* → Eradicating the disease of a diseased (Disease curative bio-purification).

(3) Conservative *Pañca karma* → Disease suppression and rehabilitation (Disease palliative *Pañca karma*).

The procedure adopted for achieving the first two objectives is all together the same. However the selection of drugs may differ according to the disease.

The first section of the present write-up deals with the *Saṁśodhan*/Purificatory effect of *Pañca karma* emphasizing on,

- Brief introduction about each procedure.
- Standard method of each procedure, standard drugs dosage as well as drugs modifcation according to various diseases.
- Indications and contra indications
- Special precautions
- Complications and their management
- Biochemical and clinical parameters for assessing both short term and long term effects of *Pañca karma* Therapy.
- Identifying specific areas of research for each procedure.

The second section deals with the disease Palliative effect of *Pañca Karmas,* which are more commonly used in conservative management than the former. The Keraliya *Pañca Karma* therapy comes under this section. It again will be presented under following headings.

- Description of standard procedure
- Indications, equipments.
- Biochemical & clinical parameters of assessment.

- Research areas
- Possible mode of action.
- The third section deals with special attributes of *Snehan* and· *Swedan* therapies from the point of disease palliation highlighting various research areas for interested investigators.
- The fourth section deals with research considerations on *Pañca Karma* therapy with special emphasis on safety parameters of *Pañca karma.*

Disease Curative *Pañca karma* therapies
The Classical *Pañca karma*

PŪRVA KARMA

(I) SNEHA KARMA OR OLEATION THERAPY

Snehakarma is the Procedure adopted to induce *Snehana* (Unctuousness), *Viṣyanda* (Fluidity), *Kleda* (Smoothness) and *Mṛdutva* (Softness) to the body.

Sneha karma is of Two Types :

(i) Internal oleation / *Snehapāna*

→ Internal administration of medicated Ghee/Oil.

(ii) External oleation / Massage / *Abhyaṅga*

→ Massage with medicated oils.

The Process of inducing oleousness to the body with the help of medicated ghee/plain ghee/medicated oils is referred as *Sneha Pāna* and is used as a preparatory procedure for major *karmas* like *Vamana* and *Virecana.*

Indications & Contra Indications for Oleation Therapy
Cs. Sū. 13/52-56

Indications	**Contraindications**
Persons to whom *Saṁśodhana* therapy is to be administered.	Those with either extremely weak appetite or voracious appetite.
Persons with Neurological disorders (i) Residual hemiplegia (ii) Paraplegia (iii) Motor neuron disease (iv) Parkinsonism (v) Sciatica (vi) Others	Increased / aggravated states of *Kapha.* Severe obesity and lipid disorders. Alcoholic intoxication.

Musculoskeletal / Joint disorders. (i) Chronic Rheumatoid Arthritis (ii) Ankylosing Spondylitis (iii) Osteo Arthritis (iv) SLE etc.	Diarrhoea
Aging and related disorders	Indigestion
Immuno-compromised Individuals	Vomiting
Vatic Type of Body-Mind Constitution	Ascites

To Determine the Koṣṭha and Dosage

- Determine the *Koṣṭha* i.e. assess the bowel status of the patient from Previous history in the following manner.
- *Mṛdu Koṣṭha* → If any of ghee, grape juice, milk, hot water or jaggery, produces purgation.
- *Madhyama Koṣṭha* → If the above items have only mild laxative effect.
- *Krura Koṣṭha* → If these items do not have any effect.
- **Determining the Dose of Oleation** → The dose of *Sneha* is determined according to the *Koṣṭha* in the following manner :

Day	*Krura Koṣṭha*	*Madhyama Koṣṭha*	*Mṛdu Koṣṭha*
1	50 - 75 ml	25 - 50 ml	10 - 30 ml
2	75 - 100 ml	50 - 75 ml	30 - 60 ml
3	100 - 150 ml	100 - 150 ml	60 -120 ml
4	150 - 200 ml	125 - 175 ml	-
5	200 - 250 ml	200 - 250 ml	-
6	275 - 300 ml	-	-
7	350 - 400 ml	-	-
Total	1200 - 1500 ml	500 - 700 ml	100 - 210 ml

General Procedure of *Snehapāna*

- Efforts should be made to promote the appetite of the palients by administering suitable *Dīpan, Pācan* drugs like *Citrakādi vaṭi* - 2 tablets twice daily for two days and / or *Trikaṭu Cūrṇa* 1 - 2 Tsf/twice daily for 2 days.
- Following *Dīpan* and *Pācan*, the person desirous of undergoing Bio-Purification should be administered plain *ghee* (after *Sneha Pāka*), the dose has to be decided according to the *Koṣṭha* as shown in the above table.
- Time of administration of ***Sneha*** (Ca. Su. 13/18.) :

  During Winters - Early morning 5.30 A.M.

  During Summer - Fvening 6 - 7.30 P.M.

The above rules do not apply to the patients suffering from acute diseases. In such cases the physician has to observe other relevant considerations (A. S. Sū. 25/17).

General Instructions

Ask the patient to take hot water every hour, until the *eructation* of the medication disappear, which has to be taken as the sign of digestion of the medication. Once the eructation disappears, and the patient develops a desire to take food, warm and light diet should be prescribed.

Complications

Complications during oleation therapy are rare and do not arise if proper procedural guidelines are followed. Administration of hot water at least for 2-3 hours after *Snehapāna* itself will limit the complications to a great extent. However, at times minor problems may arise, which can be categorized into, (i) Acute and (ii) Chronic

- Immediate complications are more are less related to the GIT upset such as, indigestian, thirst, nausea, anorexia, and stiffness in the body and pain abdomen.
- Hot water controls the above problems. Antispasmodics, appetizers and digestants may be prescribed if necessity arises. *Sutaśekhar* Rasa, *Śaṅkha Bhasma*

etc. may also be administered, if the patient complains of *Amlapitta* like symptoms.

Late complications of oleation are dose related and mostly due to the higher dosage administration, without giving proper considerations to the appetite and bowel states. They may be related to skin disorder, itching, oedema, numbness etc. Hence proper dosage has to be planned according to the *Koṣṭha* as described earlier.

Disease Specific *Snehapāna*

The procedure described above is applicable both for disease preventive bio-purification as well as disease curative *Saṁśodhana.*

The type of medication needs to be altered according to the specific disease.

Disease	Type of oil/ghee preferred
Bronchial Asthma *(Śvāsa)*	*Vāsā Ghṛta*
Psoriasis, Eczema, Urticaria *(Kuṣṭha)*	*Tikta Ghṛta, Pañca Tikta Ghṛta*
Residual Schizophrenia, Psychosis *(Unmāda)*	*Brāhmi Ghṛta*
Epileptic disorder *(Apasmāra)*	*Kalyāna Ghṛta, Pañca Gavya Ghṛta*
Cerebro Vascular Accidents *(Pakṣāghāta)*	*Tila Taila, Kṣira Balā Taila*
Diabetes Mellitus *(Prameha)* NIDDM	*Pippli Ghṛta*
Arthritis *(Sandhivāta, Āmavāta)*	*Eraṇḍa Taila*
Hepatobiliary Disorders *(Kāmalā)*	*Dāḍimādi Ghṛta*
Irritable Bowel syndrome *(Grahaṇi)*	*Pañcamulādi Ghṛta*
Gynaecological disorders *(Yoni vyāpat)*	*Kaśmaryādi Ghṛta*

Clinical features to be observed during oleation therapy

- Changes in Appetite
- Changes in bowel habit and faecal features

- General feeling of the patient viz, malaise, heaviness and feeling of stickiness of skin.

Bio-Chemical Markers of Snehana Therapy

- Assessment of Serum Lipid profile before and after *Snehana therapy.*
- Assessment of Membrane lipids and its changes (in possible cases).
- Gastric Juice analysis for assessment of → Free and total acid levels; → Mucin analysis; → Pepsin & Pepsinogen
- Intestinal juice analysis → Trypsin, Lipase activity.
- Plain X-ray abdomen to see the gastric dilatory effect of high doses of lipid intake (visceral stasis at the level of stomach).
- Assessment of Blood Histamine and Immunoglobulins, before and after *Sneha karma* (to assess the augmentation of *Kapha).*

Area of Research

- Efforts have to be made to understand the Pharmaco-kinetics of medicated Ghee / Plain Ghee i.e, its absorption, assimilation, excretion and its biological role.
- Clinical comparison has to be made between therapeutic effects of plain Ghee and medicated Ghee.
- Use of *Tila taila* may be beneficial in cases of obesity and its related disorders (Plant sterols have the tendency to reduce cholesterol levels).
- Bio-physiological changes of ghee/oil in combination with salt, need be evaluated (Addition of salt to the Ghee/oil changes its kinetics of absorption).

Massage as a pūrva karma

Massage/*Abhyaṅga* is used for relaxation, as well as for giving tone to the muscles and promoting blood circulation and for treating various disorders.

Like any other *Pañca karma* measure massage is also used

for *Śodhana* and *Śamana* purposes. Massaging the body gently, after applying oil is known as *Abhyaṅga.*

Direction of Massage

It is directed in downward direction i.e., massaging away from the heart. Some times it is also done in reverse order to help veinous return. Massage is to be performed in circular form over the abdomen & Joints.

Special considerations in massage therapy

Following Five areas / systems should be given due consideration with respect to the direction and pressure applications during massage therapy.

1 . In relation to the heart and circulation.
2. In relation to the origin and insertion of muscles.
3. Lymphatic flow/drainage.
4. Vital parts, joints/abdomen/eyes.
5. Direction of hairs on skin.

Conditions associated with veinous stasis such as CHF & lymphoedema, the direction of massage should be aimed to promote circulation. Similarly knowledge about origin and insertion of muscle and joint physiology also helps to determine the direction of therapeutic massage.

Type of oil used for massage

Type of oil selection usually depends on the wisdom of the physician, but in general, the selection of oil also depends on the type of *Doṣic* predominance.

For Body Massage

In *Vāta* disorder → *Nārāyaṇa Taila, Mahā Nārāyaṇa Taila, etc.*

In *Pitta* disorder → *Kṣīrabalā, Candanādi Taila,* etc.

In *Kapha* disorder → *Sahacarādi Taila* can be used.

For Head Massage

- *Candanādi Taila*
- *Brāhmī Taila*

Time and Duration

30 - 45 min. *Abhyaṅga and Svedana*

For *Pūrvakarma* of *Saṁśodhan* Therapy

Before *Vāmana* → 4 times at the interval of 12 hours

Before *Virecana* → 8 times at the interval of 12 hours.

Before *Basti* → Every therapeutic enema has to be preceded by massage and fomentation.

Seven Postures for Massaging the Body are

(1) Sitting (2) Lying (3) Left Lateral (4) Back (5) Right Lateral (6) Lying (7) Sitting.

The above seven positions are to be followed while performing *Piṇḍasveda and Kāyaseka* also.

II. SVEDA KARMA/TECHNIQUE OF FOMENTATION

Following massage, the patient is allowed to take rest for ten minutes and allowed to undergo medicated fomentation. Massage is immediately followed by medicated fomentation and usually whole body fomentation i.e. *Sarvāṅga Svedan* is performed in cases of *Saṁśodhana.*

Procedure

Decoction of *Daśamūla* or any other appropriately chosen material has to be taken in an autoclave chamber and boiled up to a standard temperature. The stream generated within the chamber is allowed to pass through a tube to the fomentation box specially prepared for this purpose. The thoroughly massaged patient is allowed to either sit or lye down in a steam box for 30-45 minutes and at the same time observed for proper signs of sudation. After the stipulated time schedule the patient is instructed to wear a blanket and to take rest for 10 minutes. The exposure to cold air has to be avoided at least for one hour.

Special precautions in *Svedana* therapy

- Special care has to be taken not to over *Sudate* the patient.
- Eyes of the patient may be covered with cotton piece soaked in water.

- Do not apply direct heat over the head, heart and genitals.
- The site of application of *Nāḍi Sveda* should be covered with a cloth soaked in water; so that direct effect of steam may be prevented. The other benefit imparted with this practice is uniform distribution of heat over an entire affected site.
- If the patient feels exhausted due to excessive perspiration, he may be given a glass of salted sugar solution to drink after *svedana*.

Research Areas

- Advantage of using different oils for massage in different conditions should be assessed.
- Advantage of massage with an oil when compared to the massage with plain hands.
- Advantage of medicated fomentation and comparative study of therapeutic effects of medicated fomentation when compared with hot fumes.
- Efforts to prove that proper oleation and sudation bring aggravated *Dosa* complexes (Immune complexes, ureamic toxins, free radicals, antigens, virus and bacteria etc.) to the GIT tract as claimed in Ayurvedic texts.

Clinical and Biomarkers of *Svedana*

- Changes in disease status viz inflammatory index etc.
- Metabolic and Electrolyte Status.
- Haemodynamic status viz-pulse, blood pressure monitoring.
- Mood elevating effect of massage and fomentations (Serotonin Turnover).
- Neuro muscular status viz nerve conduction and muscle tone.
- Changes in permeability of cells.

PRADHĀNA KARMA

1. VAMAN KARMA (Bio Purificatory Therapeutic Emesis)

Expulsion of aggravated or vitiated *Doṣas* / Toxic materials, through the mouth is termed as *Vamana Karma.*

In fact, it is difficult to find out an appropriate English term for the "*Vamana* therapy" carrying the whole idea. To address *Vamana* as a process of emesis is unacceptable and should be avoided as it fails to depict the central theme of this therapy. *Vamana* is entirely different from an ordinary emesis. It is a therapeutic measure, where the process of emesis is used for BioPurification. Thus it may be wise to call *Vamana* as a form of Bio-Purificatory therapeutic emesis, which if done properly ensures total disease cure.

The *Vamana Karma* occupies the most important place among all elimination therapeutic techniques and requires special care.

Indications & contraindications of *Vamana* therapy

S.No. Indications	Contraindications
1. ***Śvāsa*** (Asthma)	Highly Immuno - compromised &
2. ***Kuṣṭha*** (Skin diseases)	Debilitated Persons.
• Psoriasis	***Hṛdroga viz.***
• Eczema	IHD, CHF, Hypertension (moderate
• Urticaria	and severe)
• Seborrhic dermatitis	Peptic ulcer disease
• Hanson's disease	
3. ***Kāsa*** (Chr. Bronchitis)	Epistaxis **(Raktapitta)**
4. **Prameha** (NIDDM)	Cirrhosis of liver and Portal
	Hypertension ***(Udara)***
5. **Pīnasa** (Chr. sinusitis)	***Plīha Doṣa*** (Disorders of spleen)
6. ***Granthi*** (Lymphadenitis)	Children, Elderly, Pregnant
7. ***Arbuda*** (Tumors)	
8. ***Unmāda*** (Psychosis)	Glaucoma
	Increased Intracranal tension

9. ***Apasmāra*** (Epilepsy)	Extensive Pulmonary Tuberculosis
10. ***Viṣa*** (Poisoning)	COPD, Corpulmonale
11. ***Madātyaya*** (Alcohol) (detoxification procedure)	Peptic ulcer with a bleeding Tendency Oesophageal deficit of alcoholism
12. Diseases of ***Kapha***	
13. Mild to moderate obesity	

These are some of the important indications where *Vamana* therapy has been yielding good results. The contraindications are based on the classical and practical observations. It is always better not to advise *Vamana* therapy in such conditions.

Standard Procedure of *Vamana*

- Persons eligible for therapeutic emesis should undergo *oleation* and *sudation.*
- Day before emesis diet that stirs up *Kapha* is to be given e.g. : fish, milk, curd, rice, etc.
- *Vamana should* be performed in the early hours of morning i.e. between 7-8.30 AM.
- On the day of the *Vamana* apply oil on the head and whole body and perform massage followed by fomentation.
- Ask the patient to sit comfortably in an armed chair and administer at least 2-$2^{1}/_{2}$ liters of either boiled milk, *Yaṣṭi Madhu decoction,* or sugarcane juice.
- Wait for 10 *minutes* and administer the following standard emetic drug formulation for inducing *Vamana* in a healthy/diseased individual. However, nearly 365 different combinations of *Vamana,* are found in Caraka Saṁhitā, for use in various conditions. (CS. Kalpa Sthāna).

Standard and Effective Vamana Formulation

- *Madana phala* powder - 7-12 gm.

- *Vacā cūrṇa* - 3 - 5 gm.
- *Yaṣṭi Madhu* - 5 - 10 gm.
- Rock salt 5 - 10 gm.
- Honey - 20 ml

Thoroughly mix the preparation and make a paste of it, mix it in a glass of milk and ask the patient to swallow.

- Ask the patient to wait for 10 minutes.If the patient is getting a drive to vomit, instruct him to do so without bending his head too much. Start counting the number of bouts of vomiting and observe its contents.
- Emesis should be continued till any one or all of the following things observed :
  - Till Bile / *Pitta* appears in the vomitus.
  - The elimination of large quantities of accumulated *Kapha* / Mucus.
  - When (total contents vomited) output is more than Input.
  - Or when the Patient is getting exhausted.
- In a state of absence of bouts, or insufficient bouts, salt water may be given to induce vomiting. *Yaṣṭimadhu phāṇṭa* may be administered.
- Despite all efforts, if the bouts do not come up to 20 minutes, then put a Ryles tube and evacuate the contents of the stomach.
- If the patient cannot tolerate the *emesis* stop the procedure immediately.

Dhūmapāna/*Medicated* smoke inhalation is advocated after *Vamana* therapy. The common drug used for *Dhūma* is *Kaṇṭakāri Cūrṇa*.

Possible complications and their management

The process of emesis nevertheless is a bit exhaustive, however it is devoid of major complications, if proper care has been taken on the selection of patients.

Some of the common problems encountered are

1. Diarrhoea	Patient's B.P. & Pulse have to be monitored, no need of any active management. If it persists, administer electrol powder / SOS IV Fluids.
2. (a) Haematemesis / Blood Vomiting (b) Oesophageal Injury and damage specially in Alcoholics.	Its mostly due to the irritation of Pharynx and rarely due to mucosal eruption, if so- - Stop the procedure. - Give anti spasmodic injection / IM or IV - Haemostats may be used if needed.
3. Excess vomiting	If the process of emesis continues even after appearance of *Pitta* / Bile, it may lead to the electrolyte imbalance. Anti emetic measure should be used.

BIO - CLINICAL MARKERS FOR ASSESSMENT OF *VAMANA*

1. Procedural Success

a. Clinical signs of proper *Vamana*

	Pravara Śuddhi (Active Purification)	***Madhyama Śuddhi*** (Moderate Purification)	***Avara Śuddhi*** (Mild Purification)
No Bouts	8	6	4
Total output/ input	Output > input	Output < Input	Output << Input
Contents Vomited	Bile/Pitta	Only Mucus/Kapha	Only Vāta
Signs and Symptoms	Signs and symptoms of proper emesis.		

b. Mucopolysaccharide estimation - The mucopolysacchride content of the vomitus could be take as a standard marker of estimating the elimination of aggravated *kaphadoṣa* in *Vamana* therapy as reported by Singh, R. H. and Singh, R. S. (1978).

2. Specific disease cure relief

(i) Clinical grading scales for specific disorders

(ii) Relevant bio-chemical analysis for estimating therapeutic effect.

The procedure of *Vamana will* influence the following biological variables. Hence they are used as Markers of estimating the therapeutic efficacy such as for Histamine Dialysis, one should estimate the Blood Histamine levels both before and after *Vamana* therapy. It has been observed that Blood Histamine levels are reduced significantly both Immediately after *Vamana* and remain low even after one month of *Vamana* therapy suggesting an elimination of histamine in the *Vomitus* through gut dialysis of Histamin as well as an influence on the histamine releasing mechanism in the body.

ii. Mast Cell Stabilizing Effect :

The sustained reductions of blood histamine levels till several weeks after *Vamana* therapy indicate its long term effect, probably stabilizing the Mast Cells for a reasonable time period because of lowered physiological demand of histamine in the system due to purified bio-interior.

iii. Lipid profile changes :

Hyperlipidaemia forms one of the important indications of *Vamana* therapy. In certain recent studies Positive changes were observed in lipid profile (Singh, R. H., 2001).

3. Long Term Benefit

3. a. Parameters for assessing long term benefit

(i) Immunoglobulin assessment, $IG_{g/}$ levels before & after therapy.

(ii) Reduction in free radicals by evaluating serum SOD (Super oxide dismutase analysis).

(iii) Changes in Neuro-endocrine hormones, Thyroid profile, ACTH, Androgens and Insulin levels.

3. b. Clinical grading scales for Assessing Immune enhancement viz.

(i) Clinical grading scales for assessing *Ojas* status

(P. S. Mehara & R. H. Singh 1999).

(ii) Clinical grading scales for assessing *Agni* status

(P. S. Mehara & R.H.Singh 1999).

(iii) Grading scale for feeling of well being.

(iv) Disease propensity after *Vamana.*

(v) Pattern of Sleep after *Vamana.*

2. VIRECANA KARMA (PURIFICATORY PURGATION)

- A Procedure of purgation, that involves elimination of Doṣas/Toxins of the body through anal route is called *Virecana.*
- Similar to the process of *vamana (Emesis), Virecana or* Purgation also produces Trans-Membrane *Saṁśodhana.*
- The mucosa of Gastrointestinal tract is used as a medium of extraction of toxins and elimination of the toxins.

Indications and Contraindications - *Virecana* is specifically indicated in disorders of *Pitta,* the list of which is as follows (Ca. Si. 2/11-13).

Indications	Contraindications
Fever (chronic) *(Jwara)* Skin disease *(Kuṣṭha)* Disorders of spleen *(Pliha Vyādhi)* Haemorrhoids *(Arśa)* Jaundice *(Kāmalā)* Ascites *(Udara)* Anaemia *(Pāṇḍu)* Asthma *(Śvāsa)* Gout *(Vātarakta)* R. A. *(Āmavāta)* Tumors *(Arbuda)* Goitres *(Galagaṇḍa)* Lymphadenitis *(Granthi)* Abdominal Swellings *(Gulma)* Hemiplegia *(Pakṣāghāta)* Psychosis *(Unmāda)*	Acute Fever *(Taruṇa jwara)* Children *(Bāla)* Old, Debilitated, Delicate *(Vṛddha & Durbala)* Pregnant women *(Garbhiṇi)* Tuberculosis *(Rājayakṣmā)* Prolapse of rectum *(Gudabhraṁśa)* Bleeding per Rectum and Vagina *(Adhogata Rakta Pitta).* *Krūra koṣṭha* Individuals

Virecana Purgative Drugs

1. *Śyāmā* - Operculina turpethum (Black)
2. *Trivṛt* - Operculina turpethum (Red)
3. *Caturaṅgula* - Cassia fistula
4. *Tilvaka* - Symplocas racemosa
5. *Sudhā* - Euphorbia nerifolia
6. *Saptalā* - Acacia Sinuata
7. *Śaṅkhinī* - Clitoria ternatia
8. *Dantī* - Balispermum axillare
9. *Dravantī* - Croton tiglium.

- Based on the above drugs, 245 purgative formulations have been described by Caraka.
- Among at all purgatives, *Trivṛt* is very safe and effective alternative, and is considered as standard purgative.
- Even with *Trivṛt* 110 different formulations have been described.

Procedure of *Virecana*

- *Vamana* / Emesis usually precedes purificatory purgation, except in *Krūra Koṣṭha* individuals (A.S. Sū. 27/27-31).
- Purgative drug should be administered after 8.30 A.M. i.e. after completion of *Kapha Kāla.*
- Screen the eligible person, healthy/diseased as per the indications.
- Factors like disease state, body-mind constitution, age, state of *Doṣa*, person, time and mental condition needs to be taken into consideration.
- The patient should be first subjected to oleation - fomentation - emesis and *Saṁsarjana Krama* as described earlier.
- Then start internal oleation for 3 days, followed by medicated fomentation of 3 days.
- A day before *Virecana,* light and warm diet is advised.

- Administer the following standard drug formulations, for producing *Virecana.*

i. Powder of *Trivṛt* 10-15 gm with water. For *Mṛdukoṣṭha.*

ii. Powder of *Trivṛt 10* gm For *Madhyama Koṣṭha*
Castor oil 30 ml

iii. Castor oil 20 ml For *Krura Koṣṭha*
Icchābedhi Rasa 125 mg

- Medicine can be mixed with honey to prevent vomiting.
- Hot water in small quantity is to be given at regular intervals to induce bouts, while cold water is absolutely contraindicated.

BIO CLINICAL MARKERS

1.a. Parameters of Assessing Procedural Success *Virecan* Effect

Depending	Good	Medium	Mild
No. of bouts (*Vegiki*)	15-30	10-15	5-10
Quantity of faeces (*Mānaki)* in liters	1.5 - 2.0	1.0 - 1.5	0.5 - 1.0
Order of contents (*Āntaki*)	*Kapha*/mucin in the end	*Pitta*	*Vāta*
Symptoms (*Laiṅgiki*)	Signs and symptoms of proper purgation		

1. b. Stercobilinogen estimation : Rate of elimination of *Pitta Doṣa* during *Virecana* can be measured in terms of Stercobilinogen estimation in feacal matter during the process of purgation. Rate of elimination of stercobilinogen in the faeces can be taken as an index of elimination of *Mala Pitta* during *Virecana* (Singh & Singh 1974).

2. Specific Disease Cure

a) Clinical symptom grading scales for specific disorders as the case may be.

b) Relevant biochemical analysis for estimating therapeutic effect.

3.a. Parameters for Assessing Long term Benefit

(i) Immunoglobulin assessment IG_g levels before & after therapy.

(ii) Reduction in free radicals serum SOD (super oxide dismutase analysis)

(iii) Changes in Neuro-endocrine hormones-Thyroid profile, ACTH, Androgens and Insulin levels etc. wherever possible.

3.b. Clinical Grading scales for Assessing Immune Enhancement

(i) Clinical grading scales for assessing *Ojas* status (P. S. Mehera & R.H.Singh 1999).

(ii) Clinical grading scales for assessing *Agni* status (P. S. Mehera & R. H. Singh 1999).

(iii) Grading scale for feeling of wellbeing.

(iv) Disease propensity after *Saṁśodhana.*

(v) Pattern of sleep after *Saṁśodhana.*

Complications of *Virecana*

1. *Ādhmāna* (tympanitis)
2. *Parikartika* (cutting pain)
3. *Parisrava* (discharge)
4. *Hṛdgraha* (cardiac discomfort)
5. *Gātragraha* (stiffness)
6. *Jiwādāna* (haemorrhage)
7. *Vibhraṁsa* (confusion)
8. *Stambha* (stiffness)
9. Klama (neurasthenia)
10. Other complications.

I. 1, 3, 4, 5, 7, 9, 10, = due to inadequate *Virecana*

II. 2, 6, 8 = due to excess *Virecana*

It is quite obvious from the above list that the complications

during *Virecan* therapy are very minor a‹ ‹d easily manageable and are related to the over/under dosage of the drug.

3. NIRUHA BASTI (Therapeutic Enema-Decoction Based)

- The therapeutic procedure which arrests, restricts or with-holds the advancing of age and *Doṣas* is termed as *Āsthāpana Niruha Basti.*
- Administration of medicated decoction through anal orifice is *Niruha Basti.*
- The essential point in *Basti Karma* is to introduce the medicated liquid into the rectum/sigmoid colon. Certain amount of pressure is required to push the medicine to the desired site. For the same reason enema cans are not advisable for performing this procedure as they fail to generate sufficient pressure.

The Equipments required for *Basti* Therapy

a. 50 /200 ml syringe/Polythene bag (one liter)

b. Plain rubber catheter with whistle tip (No. 10)

c. Disposable gloves (1 pair)

d. Cotton piece (Q. S)

e. Two sterilized vessels (One liter capacity)

- Select the appropriate patient and procure the above equipments.
- Decide the dose of medication as per the age of the patient.

Quantity of *Niruha Basti* According to age

S. No.	Age	Max Quantity of *Niruha Basti*
1.	1 year	1/2 Prasrit - nearly 50 ml
2.	10 year	5 Prasit - 400 ml
3.	15 year	9 Prasrit - 900 ml
4.	18 -70 year	12 Prasrit 1200 ml
5.	Above 70 year	10 Prasrit 1000 ml

- Even though the maximum quantity of *Niruha Basti* has been stated as 1200 ml, in number of patients doses more than 900 ml has produced practical difficulties. A dose between 500 - 800 ml was observed to yield good therapeutic responses.
- Hence from practical point of view the dosage range should be kept between 500 - 800 ml.

Order of Mixing the Material

Honey → Rock Salt — Stage 1

↓

Add oil *(Sneha)* — Stage 2

↓

Add medicated paste *(Kalka)* — Stage 3

↓

Add decoction *(Kwāth)* — Stage 4

- Continuous churning should be maintained at every stage of mixing.
- Quantity of *Sneha* in *Niruha Basti*

Healthy / Pitta Person	130 ml
Vata disease	200 ml
Kapha disease	100 ml

- Ratio of mixing *Kalka : Sneha : Kvātha*
  1 : 4 : 8

Indications and contra indications for *Āsthāpana Basti*

Indications	Contra indication
• ***Sarvāṅgavāta*** (Hemiplegia & Neurological conditions	• After *Snehapāna*
	• Indigestion
• ***Ekāṅga Vāta*** (Monoplegia)	• Excessive oleation
• ***Udara*** (Pain abdomen)	• After having meal
• Retention of flatus, Urine, Stools, Semen etc.	• Impaired digestive power
	• Tired

• Loss of strength, muscle, semen etc.	• Weak persons
• ***(Vibanḍha)*** Constipation	• Immediately after elimination
• Loss of sensation	
• ***(Kṛmi)*** Worm infestation	• Intestinal obstruction &
• Diarrhoea	• Perforation
• Splenic diseases	• After drinking water
• Fistula in Ano	• Anger
• Headache, earache	• Fear
• Chest pain, Backache	• Fainting
• ***(Kampavāta)*** Tremors	• Vomiting
• Convulsions	• Dyspnoea
• ***(Vātavyādhi)*** All 80 types of *Vāta* disorders	• Cough
	• Cholera
	• Indigestion

Procedure

- Screen the patients eligible for *Niruha Basti.*
- Prior to starting the course, procure rubber catheter *(Basti Netra)* and syringe / polythene bag *(Basti Puṭaka)* devoid of defects.
- Prepare *Basti Dravya* in a required quantity according to age group.
- The medicine should be slightly warmed indirectly by putting the container into hot water.
- If *Kalka Dravya* is not specifically mentioned in any of the formulations, *Yavanyādi Kalka* can be used.
- *Niruha Basti* is to be performed on empty stomach between 6 - 8 a.m. after subjecting the patient for gentle massage and mild sudation.
- Ask the patient to lie down on the table in the left lateral position. Anoint the catheter and the Anus and introduce it into the rectum properly. Then squeeze the

syringe *(Basti Puṭaka)* and introduce the medicine. During administration the patient is advised not to sneeze, cough, laugh, yawn or shake the body. Withdraw the catheter/netra if patient develops an urge to micturate or defecate.

- Slowly withdraw the *Basti Netra*/catheter.
- Maximum period of withdrawal of *Basti Dravya* is around 1 hour.
- If the medicine administered does not expel even after 1 hour another Basti can be given with *Yavakṣāra, Gomūtra* and *Amla Dravyas.*

Sings & Symptoms of Proper, Insufficient And Excessive Niruha Basti

Proper	Insufficient	Excess
• Expulsion of medicine is between 15 - 30 minutes.	• Either medicine is retained or expelled very quickly (1 - 5 min.)	• Passing stools a number of times • Dullness in the body
• Urge to defecate and micturate affer 1 hour	• Headache • Lower abdomen pain	• Bodyache • Tiredness • Sleep
• Lightness in the body		• Weakness • Drowsiness

- If *Basti Dravya* is expelled immediately, second dose may be given.
- After getting proper sings and symptoms give rest for some time and then ask the patient to have bath with hot water.
- Then follow specific diet mentioned in *Saṁsarjana Krama.*
- After *Niruha, Anuvāśana Basti* can be given in the evening hours of the same day.
- Watch for Complications of *Niruha Basti.*

Even though number of complications are described in classical texts for *Basti* in general most of them are rare and do not result in normal conditions. The commonly encountered problems are

- Feeling of burning / irritation at the site of application,
- General feeling of uneasiness,
- Headache, constipation and diarrhoea.

4. ANUVĀŚANA BASTI *(Therapeutic Enema-Oil Based)*

Predominantly oil based enema that can be administrated for both healthy and diseased individual is called *Anuvāśan Basti.*

Indications & Contra Indications for *Anuvāśana Basti*

Indications	Contra Indications
• Persons eligible for *Āsthāpana Vasti* are eligible for *Anuvāśana vasti* also. • Dryness • Increased digestive power • Suffering from *Vāta Roga*	• Persons contra indicated for *Asthāpana Basti* are not eligible for Anuvāśana • taking meal • Without taking meal *(Abhukta)* • Acute fever *(Navajwara),* Weak persons* Poisioning • Anaemia *(Pāṇḍu)* • Hemorrhoides *(Arśa)* • Jaundice, Poly urea Splenomegaly • Costive bowel (Krurakoṣṭha) • Worm infestation etc.

Three Types of *Anuvāśan Basti* and its Dosage (Su. Ci. 37/2)

- *Sneha Basti (1/2 of Niruha)* 300 ml
- *Anuvāśan Basti (1/2 of Sneha)* 150 ml
- *Mātrā Basti (1/2 of Anuvāśan)* 75 ml

Time of administration and procedure :

Winter & Spring	Morning
Summer and Rainy	Evening

- *Anuvāśan Basti* should be administered 15 - 30 minutes after light diet.
- Procedure of Administration is Similar to be *Niruha Basti*
- 5 - 10 gm of Rock Salt may be added to the oil/ghee.
- Maximum duration of retention of *Anuvāśan Basti* is up to 9 hours.
- Complications are far less than *Niruha*
- Light & warm diet is advocated at evening hours.
- If the enema is expelled back immediately, second dose can be advised.
- If it is retained after 9 hours, no further treatment is required if no major problem arises (A. S. Sū /28).

Basti-Research Area

Basti, a form of Bio-Purification is administered into the rectum for its action on large *bowel / Pakvāśaya. Basti* is claimed to be useful is various Nervous system related disorders.

Enteric medication and enteric nutrition, the two important terms used in modern medicine may not explain the whole phenomenon of *Basti.* Even though the purpose of administration is same in both the cases, site of action is different. The *Bastikarma* exerts a more Systemic action besides exerting local action probably operating through large intestine involving enteric nervous system.

Enteric nervous system is a collection of neurons in the gastro internal tract constituting brain of the Gut. Apart from its influence on GIT, enteric nervous system also influences the Autonomic nervous system thereby producing systemic effects. Bio-medical research should be concentrated to evaluate,

(i) Effect of Basti on enteric nervous system

(ii) Medicinal effect of Basti

(iii) Its biophysical effect on the colon, viz.Intracolonic pressure, changes in viscosity, and pH etc.

(iv) Osmosis/Dialysis of toxins and medicaments

(v) Changes in the bacterial flora of the colon and its neuro-bio attributes.

(vi) To monitor the retention-time of Basti

(vii) Analysis of expelled material in Basti.

Bio-Chemical Tests

Apart from disease specific bio-chemical analysis :

(i) Immuno - globulin assessment

(ii) Free radial estimation

(iii) Role of Neurotransmitters to evaluate long term *Basti.*

5. NASYA KARMA *(Errhines)*

- Administration of medicines in various forms through nostrils is known as *Nasyakarma.* (Su. Ci - 40-121). Also known by the name *Sirovirecana* i.e. Purification effected through nose.
- *Nasya Karma* is indicated in diseases of the head and other organs situated above shoulder.

Types of Nasya

Depending on types of Medicament	Depending on Pharmacological Action.
1. *Nāvana* - Medicated oil	1 . *Recana* (Purificatory)
2. *Avapiḍana*-Fresh Juices	2. Bṛṁhaṇa(Nourishing)
3. *Dhmāpana* - Medicated powders	3. *Śamana* (Palliative)
4. *Dhūma* - Medicates fumes	
5. *Mārśa/Pratimārśa* - Very small quantity of oil	

NASYA

Indications	Contraindications
• Headache	• After meal
• Chronic Sinusitis	• After having oleation

- Migraine
- Facial paralysis
- Cataract
- Disease of mouth, nose, ear, eye and head
- Pyschosis
- Aphonia
- Stammering
- Toothache and other tooth disorders
- After taking Alcohol & water
- After having head bath
- During hunger, Thirst
- Exhaustion
- Syncope
- After exercise
- After coitus
- Acute fever
- After *Virecana* and *Anuvāśan Basti*
- In state of pregnancy
- Acute coryza etc.

Time & Duration

During summer ...... Morning hours between 8-10 AM.

During winter ...... Afternoon hours

Nasya Karma like any other *Pañcakarma* procedures is advisable for both disease prevention i.e. *Bṛṁhaṇa Nasya &* disease cure.

Seasonal administration of *Nasya* to a healthy person.

i. Winters - Noon

ii. *Śarad ṛtu* - Morning

iii. *Griṣma ṛtu* - Evening

iv. *Varṣā ṛtu* - When the sum is visible.

Dosage of different types of Nasya

Type of Nasya	Mild Purification	Moderate Purification	Effective Purification
Nāvana	8 drops	16 drops	32 drops
Avapiḍana	4 drops	6 drops	8 drops
Pradhamana	250 mg	375 mg	500 mg
Mārṣa	6 drops	8 drops	10 drops
Pratimārṣa	2 drops	2 drops	2 drops

Procedure

- *Nasya* should be conducted to the eligible persons when the temperature is moderate, and the sky is clear without clouds.
- It should be conducted in the morning hours during summer and in the afternoon hours during winter season.
- *Nasya* should be avoided in children and aged (below 7 years and above 80 years). But *Pratimārṣa Nasya* can be performed since birth to death.
- Similarly *Dhūma Nasya* should be conducted to the persons of above 12 years of age only.
- Internal oleation *(Snehapāna)* should not be done before *Nasya Karma.*
- Massage the head and body with *Dhanvantarī Taila* and *Kṣirabalā Taila* respectively. And then do gentle sudation with a cloth dipped in hot water. Care has to be taken to protect eyes while performing *Svedan.*
- Advise the patient to lie down on the table on his back with his head end lowered.
- Then bend the head slightly backwards and hold the nostrils with the left thumb and pour the required quantity of the drug into the nostrils with the right hand by means of a dropper or a cotton piece.
- *Dhūrma Yantra* will be used while performing *Dhūma Nasya.*
- During the process of pouring the drug into one nostril, the other nostril shoutd be closed and the patient is to be asked to inhale the drug.
- Gentle massage should be done to throat, fore head, palm and soles, shoulder, immediately after nasal administration.
- Advise the patient to gargle with lukewarm water followed by *Prayogika Dhūmapāna.*

Clinical Evaluation OF *NASYA*

Proper	Insufficient	Excessive
• Feeling of lightness • good sleep • general feeling of well being	• Dryness of the body • Non relieving of the symptoms	• Feeling Heaviness in the head • Excessive salivation

- After *Nasya* cold water should not be used for drinking or bathing. Use only warm water. The procedure may be conducted on alternate days or once in 3 days for about 7 to 21 days.
- Avoid exposure to sun, alcohol, head bath, exposing to dust, journey, Anger etc. after *Nasya Karma*.

Path - way and Fate of *Nasya*

Fate of Drug	Drug Pathway
Chemical Impulse	Nasal cavity
↓	↓
Electrical Impulse	Olfactory epithelium
↓	↓
Neuronal Impulse	Olfactory Nerve
	↓
	Cribrifom plate of ethemoid bone
	↓
	Ant. Cranial Fossa
	↓
	Medial and lateral olfactory area of cerebral cortex

Thus the chemical Impulse generated by *Nasya* finally converts into Neuronal impulse and influence on cerebral cortex area and there by producing a stimulatory effect resulting in evacuation of *Doṣas*.

Markers of Nasya karma

1. No. of sneezing bouts.
2. Quantity & Quality of sneezed material
3. Symptomatic relief, if any, by suitable grading scales
4. Disease specific clinical and investigatory evaluation

PAŚCĀTA KARMA

SAṀSARJANA KRAMA ***(Post Procedural Dietetic Regimen)***

The process of restoration of digestive functions (Bio-fire/ *Agni*) by means of advocating specific dietetic regimen is known as *Saṁsarjana krama.*

Schedule of Dietetic Regimen

7 days for Thorough Purification ***(Pravara Śuddhi)***

5 days for Moderate Purificatian ***(Madhyanta Śuddhi)***

3 days for Mild Purification ***(Avara Śuddhi)***

Schedule of *Saṁsarjana krama*

Days		*Pravara Śuddhi*	*Madhyama Śuddhi*	*Avara Śuddhi*
1st day	Morning		No diet will be given	
	Evening	PEYĀ	PEYĀ	PEYĀ
2nd day	Morning	PEYĀ	PEYĀ	VILEPĪ
	Evening	PEYĀ	VILEPĪ	YUṢA
3rd day	Morning	VILEPĪ	VILEPĪ	Māṁsarasa
	Evening	VILEPĪ	Akṛta Yuṣa	Normal Diet
4th day	Morning	VILEPI	Kṛta Yuṣa	"
	Evening	Akṛta Yuṣha	Akṛta Māṁsarasa	"

5th day	Morning	Kṛta Yuṣa	K.māṁsarasa	"
	Evening	Kṛta Yuṣa	Normal Diet	
6th day	Morning	A. Māṁsarasa	"	"
	Evening	K. Māṁsarasa	"	"
7th day	Morning	K. Māṁsarasa	"	"
	Evening	Normal Diet	"	"

Biological Value of Specific Diets

i. *Peyā* : *Peyā* is a thin gruel of rice along with its solid portion, prepared by thoroughly boiling 14 parts of water and 1 part of broken rice.

Nutritive value of Peyā (Rice Porridge)

Peyā	K. cal every	Protien (gm)	Fat (gm)	Carbo hydrate (gm)	Ca (gm)	Phosp-horus (gm)	Iron (mg)	Thiamine	Nicotinic acid(mg)	Ribo flavin	Vit c (mg)
100 (gm)	94	2.7	2.2	15.8	0.11	0.07	0.25	0.04	0.11	0.12	3.3

ii. *Vilepī* : *Vilepi* is a rice preparation more solid in nature than *peyā* and is prepared by adding 4 parts of water and 1 part of rice and boiled till rice becomes completely soft.

iii. *Yuṣa* : A semisolid preparation obtained by boiling any appropriate type of pulse.

a. *Kṛta Yuṣu* : It is boiled by adding

Dhal	-	50 gm
Pippali	-	6 gm
Śuṇṭhī	-	6 gm
Water	-	750 gm
Oil/ghee	-	Sufficient quantity
Salt	-	Sufficient quantity.

iv. *Akṛta yuṣa* : It is devoid of all the above things. It is a plain well-boiled pulses (dhal).

Nutriens of Yuṣa [Bengal gram cooked]

Yuṣa	K. cal every	Protien (gm)	Fat (gm)	Carbo hydrate (gm)	Ca (gm)	Iron (mg)	Thia Mine (mg)	Nicotinic acid (mg)	Ribo flavin (mg)
100 (gm) Yuṣu	158	5.5	3.6	25.6	0.05	3.4	0.04	0.14	0.28

The object of *Saṁsarjan krama* is restoration of digestive power through specific dietary schedule. After completing the *saṁsarjan krama*, not only appetite of the patient is promoted but also absorptive as well as assimilatory functions of GIT are also substantially increased.

Parameters of Assessment

1. D-xylose excretion test for Improved Asortion.

It is a biomarker denoting the improved absorption pattern after *Saṁśodhana karma.* The excretion pattern of D-xylose, is increased after *Saṁśodhan* and *Saṁsarjan* procedure which indirectly signifies the improved state of absorption of GIT tract.

2. Clinical criteria for assessment of *agni.*

3. Clinical criteria for assessment of *Ojas.*

Disease Palliative Pañcakarma Therapies
Keralīya Pañcakarma

KERALĪYA PAÑCA KARMA

After analysing multiple benefits rendered by massage and fomentation *(Snehan & Swedan),* from both bio-puritication to the disease palliation, it would be appropriate to discuss, various *keralīya Pañcakarma* therapies, which are mainly based on the principle of *Snehan & Swedan.*

- Keralīya *Pañca karma* therapy denotes, collective measures and procedures, highly popularised because of their continuous and effective clinical practice since hundreds of years by traditional *Vaidyas*, owing to their simplicity and efficacy.
- Only a brief account of description about some of these procedures is available in classics.
- Success, popularity and therapeutic efficacy of these procedures, which is entirely based on *Snehana & Swedana* theory, directly confirms the therapeutic efficacy of *Pañcakarma.*
- The following five therapies are enlisted as *Keralīya Pañca karma,* although they use many other practices also,

    1. *Dhārā Krama*
    2. *Piṇḍa Sweda*
    3. *Kāya Seka*
    4. *Anna Lepa*
    5. *Siro Lepa*

The following table suggests the difference between classical & *Keralīya Pañcakarma* therapy.

Similarities - dissimilarities of Classical & Keralīya Pañcakarma

	Classical Pañcakarma		Keraliya Pañcakarma
Components	*Snehana* *Svedan* } *Purva Karma*		*Dhārā Krama* *Piṇḍa Sveda*
	Vaman *Virecan* *Āsthāpan Vasti* *Anuvāsan Vasti* *Nasya Karma*	*Pradhana Karma*	*Kāya Seka* *Anna Lepa* *Śiro Lēpa*
Type of benefit (Primary)	Essentially puriticatory i.e. Saṁśodhan eflect {Trans membrane purification}		Essentially palliative i.e. *Saṁsaman* effect. (Transcutaneous Purification)
Other effects	Designed to produce-lightness *(Laṅghana)*		Effects (*Bṛṁhaṇa*) Nourishment of tissues
Secondary benefit	Disease Palliation		- External purification {Trans-skin purification} - Rehabilitation - Physiotherapy
Medium of elimination of *Doṣas*/Toxins	Through GIT Tract *(Koṣtha)*		Through Skin (*Śākhā Māṁsa Asthi Sandhi*)
Oleation & Fomentation are	Preparatory Procedures		Main Procedures
Special attributes	1. Method of prevention of seasonal diseases 2. Preparatory / therapy for Rasāyana (Rejuvination Measures) 3. Disease cure.		Non spesific rehabilitative attributes
Procedural considerations	based on *Doṣas* *Vāta* disorders - *Basti* *Pitta* disorders - *Virecan* *Kapha* disorders - *Vaman*		based on diseases. *Sirodhāra* - psychosis neurosis and mental diseases ete. Piṇḍasveda - Joint disorders, etc. *Kāyaseka*-Neurological disorders etc.
Preparatory procedure	*Deepan, Pāncan & Snehan Svedan*		Only - *Deepan Pācan*
Complications	May result		Not seen
Safety/Efficacy	Safer/More effective		More safer/effective
Benefit	Specific disease cure Immuno-Potentiation (Long Lasting)		Immediate benefit (Short term) Rehabilitative.
Effect seen is mostly	Mostly procedural effect		Medicinal + Procedural
Therapeutic Potential	More wider		Limited

1. KĀYASEKA

- A specialized *Keralīya Pañcakarma* Procedure where massage and fomentation (*Snehan* and *Swedan*) are performed simultaneously.
- Also known as *Kāyaseka* or Taila seka.
- Pouring of medicated luke worm liquids/oils on the whole body for a specific time in a specialized manner is known as *Picchil.*

General Indications	General uses
• Hemiplegia/paresis	• Delays the process of Ageing.
• Paraparesis	• Improves skin textures
• Sciatica	• Restors vitality and enthusiasm
• MND	• Disease palliation
• Multiple Sclerosis	• Improves lusture of skin
• Facial Paralysis	• Strengthen muscle & tissues
• Parkinsonism	• Provides Psycho/physical Soothening.
• *Vāta* type of constitution	
• Ankylosing spondylitis	• Promotes circulation
• Improves appetite	

Equipments required

1. Massage table/*Droṇi* - 1
2. Stove -1
3. Cloth Piece - 4 (18" x 18" size)
4. Vessels (Big) - 2
5. Small vessel - 1
6. Medicaments - as required oils

The procedure of *Kāya Seka* is similar to the *Piṇḍa Sveda* and is explained in the following pages.

2. PIṆḌA SWEDA

Piṇḍa Sveda or *Navarakizi,* is one of the most popular

therapies of Keralīya *Pañcakarma.* The procedure has been described in Ayurvedic Texts as a form of *Śaṅkara sveda* (C. Sū. 13/25).

Inducing local or generalized perspiration by means of medicated puddings is known as *Piṇḍa Sveda.* It is a process ot fomentation which induces *Snehan & Svedan* simultaneously.

Indications

1. All the conditions where *Kāya seka* is indicated.
2. However it is of special benefit in diseases such as
    1. Ankylosing spondylitis
    2. Chronic rheumatoid arthritis
    3. Motor neuron disease
    4. Pseudo Muscular hypertrophy
    5. Residual hemiplegia/paraplegia

Equipments Instrument

1. Droṇī-(1)
2. Cloth piece (8) (18" x 18" size)
3. Gas Store - 1
4. Vessels - (4) 3 liter capacity
   (2) 12 liter capacity

Drugs

1. *Bhṛṅgarāja taila, Candanbalā lākṣāditaila*
   - for head massage.

Māhā nārāyaṇa taila/Balā taila
- For body massage

2.	*Navara* Rice	- 600 gm
	Balā	- 500 gm
	Milk	- 2 liters
	Water	- 8 liters

Attendants required : (5)

Time & Duration :

Piṇḍa Sveda may be conducted between 7 - 10 A.M, for 45 min to $1^1/_2$ hour. Total duration of therapy at one session is 14 - 21 days. It has to be repeated after every 3 - 4 months at least on 3 occasions.

Preparatory Procedures

1. Preparation of Rice Puddings :

- Root of *Balā* (500 gm) and water are taken is a 1:16 ratio in a vessel and boiled till 1/4th decoction of *Balā* remains (2 liters).
- Add 1 liter of milk with an equal quantity of *Balā* decoction and add 600 gm of *Navara* rice and cook the whole mixer on mild fire so as to make it semisolid.
- The cooked rice is distributed equally in 8 cloth pieces to form eight rounded puddings also known as *Piṇḍa* or *Poṭṭalies* in such a way that it does not leak out and also to have firm grip of holding.
- Patient is allowed to sit on a *Droṇi* by wearing a loin cloth. Massage the head and body with the oils as described above and paste of *Āmalakī Cūrṇa* has to prepared and pasted on the Anterior frontanelle.
- The decoction of *Balā* and milk is kept on a stove under continues and small flame. The 8 boluses of Rice Puddings are kept in the above decoction. Four therapists should sit at the corresponding 4 limbs of the patient.
- The first attendant supplies the bolus from the warm decoction vessel and replaces it with the used one. Thus at a time 4 boluses should always be kept in the decoction and other 4 are used for massaging in the body by the four therapists.
- Two of them will take care from neck to the hip region and the other two take care of lower limbs.
- *Piṇḍa Sveda* and *Kāyaseka* both are to be performed in

7 postural massages as described in section 1, for 10 - 15 minutes in each position.

- The procedure remains same for *Kāya Seka* also. However in *Kāyaseka* pieces of clothes dipped in medicated oil are held in fists of the right hands of the attendants and pressed gently so that oil will be poured through the thumb from a height of 5 - 6 inches on the body of the patient.
- Massage will be performed by the therapists with the left hand directed in downward direction.

The oil has to be collected from the massage table and again reheated and used in the procedure.

Post Procedure

Kāyaseka	**Piṇḍa sveda**
The procedure is continued till perspiration appears on fore head, axilla and groin	Procedure is continued for $1^{1}/_{2}$ hour or till whole liquid decoction is evaporated.
Gentle massage is to be given followed by warm water bath.	The bolus are removed and the rice has to be applied and massaged over the body for 30 minutes.
Light & hot food should be advocated	Following the procedure the patient is allowed to take hot bath.

Monitoring the effect of Piṇḍa Sveda and Kāya Seka

1. Rate of symptomatic relief.

2. Functional improvement in limbs by measuring walking time, grip power, pressing power etc.

3. Changes in inflammatory index in inflammatory diseases like arthritis.

4. To measure muscle power, tone and nerve conduction studies in neuropathies, and to include EMG in possible cases.

5. Feeling of well being, mood elevation and cognitive functional assessment in degenerative nerve disease.

6. To monitor the progression/remission of specific diseases in terms of relevant investigations.

7. Monitoring CPK levels in cases of pseudo muscular hypertrophy and rheumatoid profile in arthritis.

3. ŚIRODHĀRĀ

Sirodhārā is a procedure consisting of continuous pouring of a stream of medicated oil, decoction, milk, buttermilk etc on the forehead of the patient from a specified height for a specified period of time.

Śirodhārā has been found to be effective in the following disorders when accompanied with other treatment modalities *viz, Śirovasti, Śirolepa* and *Nasya karma.* The under mentioned indications also hold good for these procedures also.

General Indications

1. Chronic daily headache	9. Psycho somatic disorders
2: Insomnia.	- IBS
3. Senile dementia	- Peptic ulcer syndrome
4. Motor neuron disease	- Ulcerative colitis.
5. Residual schizophrenia	10. Fibromyalgia syndrome
6. Anxiety disorder	11. Skin disorders viz, Psoriasis
7. Depressive illness	12. Generalized cerebral atrophy.
8. Parkinson's disease	

Equipments/Instruments	**Medicaments/ Oil/any other liquid.**
1. *Dhāra Pātra/Śarāva*	Medicine-as per the requirement/
2. Massage table/ *Droṇī*	1500-2500 ml.
3. Saline stand-1	Attendants 1-2
4. Twice thread *(Varti)*	

Types of Dhārā and their indications :

Type of Dhārā	Type of Liquid	Indications
Taila	Oil	Generalized cerebral atrophy, MND, Parkinsonism, CVA.
Takra	Butter milk	IBS, Peptic Ulcer
Kaṣāya	Decoction of suitable herbs	Dementia, Depressive illness
Jala	Luke warm water	Healthy individuals.

Special precautions to be taken :

1 . The Pt. should be instructed to meditate.

Or, to concentrate on his breath.

2. Gauge piece is tied just at the level of eye lashes, so that the liquid many not trickle downwards.

3. The vessel should be slowly oscillated in a to and fro-manner.

4. Flow should be continuous.

5. Temperatur of the liquid has to be maintained.

Śarāva

The preferred material for *Śarāva* should be of clay or suitable metals like silver or copper or even stainless steel. The capacity of the container should be of $2^1/_2$ litres. It should be 5-6 inches deep with a wider mouth than the bottom and a hole in the centre of bottom. A thread *Varti* of six *Aṅgula* length is placed inside the hole hanging downwards.

The *Śarāva* is hanged at such a height that the *varti* of the *Dhārā* is only 2-3 *Aṅgula* above the forehead of the patient lying below it. This short distance is maintained so that the liquid trickling *Varti* should not become cold and should not hurt the forehead of patient or should not cause any discomfort.

Other Equipments

Clothpiece, pots, water for bath, *Mūrdha* tail and medicated liquids.

Procedure of *Śirodhārā*

The room where *Śirodhārā* is to be performed should be clean, well-ventilated and very quiet. The *Droṇī* is cleaned and placed along with other materials. The *Śarāva* is hanged at a suitable height. The patient should be fully informed about the procedure and asked to relax during the process. He is made to lie on the *Droṇī* with his head resting on the head end. The body below the neck should be massaged with luke warm suitably medicated oil. The head above the eyebrows should be tied with a cloth linen piece to avoid the *Dhārā dravya* trickling in the eyes of the patient. The *Dhārā dravya* is poured in the *Dhārā pātra* carefully and after the *Pātra* stands stable, then the *Dravya* is allowed to trickle over the forehead of the patient through the *Varti* slowly but constantly. If the *Dhārā dravya* is *Kvātha* or butter milk then it should be carefully and cautiously mixed. The *Dhārā Pātra* should be continuously oscillated to and fro in horizontal way so as to avoid irritation at a particular site.

This *Dhārā* process is done for at least half an hour in the morning upto 21 days. It is believed that through this irrigation method of head the effect of medications can be achieved upto the limbs and entire body by 21 days.

Time & Duration

- *Dhārā Krama* can be done continuously for 7 days /14 days or 21 days for 45 minutes to 1 hour, depending on the condition of the patient.

MONITERING THE EFFECTS OF *ŚIRODHĀRĀ*

i. Clinical Parameters

a) Measuring symptomatic improvement

b) Feeling of well being

c) Improved sleep pattern

d) Regression of specific illness

e) Improvement in cognitive functions like IQ, Anxiety state.

ii. Different Assessment Scales used in *Śirodhārā*

a) Visual Analogue

b) Scale for pain

c) Hamilton anxiety rating scale (HARS)

d) Hamilton depressive rating scale (HDRS)

e) Reaction timer

f) Pulse monitor

g) Galvanic skin resistance (GSR)

h) Mental fatigue rate

4. ANNALEPA

Application of rice pastes all over the body is known as annalepa.

Indications

- Osteo arthritis *(Sandhi Vāta)*, *Vāta Rakta, Vāta Roga*
- MND *(Śoṣa), (Pakṣāghāt),* Paralysis
- Vitamin deficiency diseases, Hypertension.

Equipment required

Droṇī - 1

Stools - 4

Stove - 1

Vessels - 3

Drugs

Navara rice - 600 gms

Balā root - 250 gms

Milk - 1 litre

Water - 4 litres

Attendants 4 attendants are required.

Time & Duration : 7 to 14 days for about 1 to 1 $^1/_2$ Hour.

Procedure

- At frst make *Navara* rice into grits and then prepare pudding as described in *Navara* Khizi.

- Advice the patient to sit on the massage table by wearing a loin cloth only and then apply oil on the head and body.
- Afterwards gritty pudding is applied on the whole body with the help of 4 attendants from the neck to feet region and taken care to maintain temperature till the procedure is completed. In this way the procedure may be continued for one to one and half hour.
- Afterwards remove the pudding with the help of coconut leaves and again apply oil on the body.Subject the patient for medicated water bath.
- Advice him to have a light diet.

5. ŚIROLEPA

Application of medicated pastes on the scalp is known as 'Śiro Lepa'.

Indications

- Disorders of eye, Headache, Psychic disorders, Insomnia and is also indicated in all the indications of *Dhārā* treatment

Equipment

* *Droṇī* / massage table	....	1
* Full armed chair	....	1
* Stove	....	1
* Vessels	....	3 to 4
* Mortar	....	1

Drugs

* *Āmalakī* Powder	....	250 gms
* Butter milk	....	500 ml.
* Water	....	500 ml

Attendants 2 attendants are required.

Time & Duration The procedure may be conducted daily nearly 1-1$^1/_2$ hour for 7 to 14 days.

Procedure

- Prior to the procedure remove the hair on the patient's head.
- Add buttermilk and water to *Āmalakī* powder and boil it well, till the liquid portion is completely evaporated. Then powder it well in a mortar and prepare the paste.
- Massage the head and body with separate oils and ask the patient to make him to sit on an armed chair comfortably.
- Then apply paste of *Āmalakī* on the scalp in a thickness of 1/3 or 1/4 of an inch and keep a plantain leaf on the head and then tie it well.

After $1^1/_2$ hour, remove the paste and again apply oil on the, body and then subject him for a medicated bath.

6. ŚIROVASTI

Keeping the medicated oil / *ghee* on the head for a specific period with the help of a 'cap' made of Animal skin is known as *"Śirovasti"*

Indications

Facial paralysis

- Headaches, Eye disorders
- Insomnia
- Parkinsonism
- Hemiplegia
- MND
- Generalised cerebral atrophy

Equipment

Full armed chair/with a neck rest	- 1
Stove	- 1
Vessels	- 3 to 4
Cloth	- 1 mt
Animal skin cap/*Śirovasti cap*	- 1

Black gram flour	- 100 mg
Hot water	- Q. S.

Drugs

Medicated oil

Eg : *Dhanvantari Taila* for facial paralysis.

Attendants

2 attendants are required.

Time & Duration

- The ideal time for *Śirovasti* is between 3 to 5 PM
- It may be conducted continuously for 7 days, 14 days, 21 days, or upto 28 days for about 45 minutes to $1^1/_2$ Hr.

Procedure

- Before going to start, shave head of the patient for the convenience of the procedure.
- Body massage and light fomentation is to be conducted.
- Then *Śirovasti cap* should be arranged like a cap on the head by covering it around the head and then tie it well with a long cloth piece.
- Add sufficient quantity of lukewarm water to Black gram flour and prepare *Māṣa Kalka*. It should be applied inside the cap, around the scalp and also externally, which helps to avoid leakage of oil.
- Then 1 to $1^1/_2$ litre of lukewarm medicated oil should be poured gently on the scalp with the help of a ladle.
- Whenever heat reduces, the oil in the cap is replaced with warm oil. In this way the procedure may be continued for 45 minutes to $1^1/_2$ Hour.
- After the completion of lhe therapy ask the patient to bend forward and collect the oil in a wide mouthed vessel or basin and it can be used on the next day.
- Then remove the *Sirovasti cap* and clean it well.

- After that massage the body and then go for medicated water bath. Then advise the patient to take light diet.

Markers For Measuring The Therapeutic Response In Śirovasti

1. Clinical markers

- Measuring the rate of improvement in clinical symptom
- Measuring the rate of improvement in cognitive function

2. Biochemical markers

- Neurotransmitter
- CSF
- X-ray
- CT-scan
- EEG

Special attributes of Snehan and Swedan Therapies

The classical Āyurvedic *Pañcakarma* therapy consists of five fold purificatory measures namely *Vaman, Virecan, Āsthāpan, Śirovirecan and Nasya Karma,* as described in section I. Suśruta also included *Raktamokṣaṇa.*

The above procedures are intended for producing bio-purification / detoxification and there by ensuring permanent disease cure. Thus the effect obtained through classical *Pañcakarma* procedure is often termed as *Saṁśodhan* effect.

However, individual components of classical *Pañcakarma* therapies also possess disease palliative effect, and owing to the more simplified nature are largely practised from this aspect. They include some aspects of,

- External oleation/*Abhyaṅga*/massage.
- Internal oleation/*Sneha Pāna*
- Medicated Fomentation/*Sweda Karrna* and its variants
- *Vasti*
- *Nasyakarma*

Disease palliative aspects of *Snehan* therapy/Lipid therapy

Both *Snehana* and *Swedana* are included under, six important principles of conservative management *i.e. Classical Ṣaḍupakramas* and therefore form the principle method of palliative care. Besides, their potential role as preparatory procedure in *Saṁśodhan* therapy, *Snehan* and *Swedan* are used as sole therapeutic approaches in various disorders.

Following Table lay downs the purificatory as well as palliative applications of Internal oleation and Medicated fomentation.

	Internal oleation *(Snehan)*			Medicated Fomentation *(Swedan)*		
	Indications	***Dose***	***No. of Days***	***Indication***	***Days***	***Duration***
Śodhan	i. Healthy individual ii. Diseased	Medium dose	3 - 7 days	I. Healthy individual ii. Diseased	$1^1/_2$ day for Vaman $3^1/_2$ day for *Virecan*	30-45 min
Śaman	Children, Aged Immuno-Compromised, for Long term use	Mild doses	Long term	Joint disorders viz; RA, OA, AS. Sciatica	15-21 days	45 min to $1^1/_2$hour.
	Psychosis and residual schizophrenia	High Doses	(7-15 days) Short term (requires repetitions)	Hemiplegia Ankylosing spondylitis etc	15-21 days	45 min to $1^1/_2$hour.

Internal oleation (Research area)

Science of Āyurveda has advocated *Sneha Karma* which may be otherwise termed as lipid therapy. The idea of Internal administration of lipids, either plain *ghee*/oil or medicated *ghee* preparations, again may appear very strange to the professionals of other disciplines, however it is based on sound Āyurvedic principles, even from the contemporary view. Lipids Substances, as a dietary constituent have received enormous attention as mentioned below :

Biological Significance of lipids

(i) One of the three main types of food stuff and yields more heat and energy than carbohydrates and proteins.

(ii) Essential precursors of several hormones critical to normal existence, such as cholesterol, steroids and sex hormones.

(iii) Anoth:r function of dietary lipid is to supply the essential dietary constituent, known as Essential fatty acids (EFA).

(iv) Lipids form the major structural component of the cell well.

Thus both Āyurvedic and contemporary views are more or less similar as far as recognition of biological significance of lipids is concerned.

However, where as modern medical system is highly cautious about the use of lipids in therapeutic intervention, Āyurvedic theory propounds judicial use of lipids in various disorders. The following table presents some of the criteria of classification of lipids and their therapeutic indications.

Criteria of Classification of Lipid Therapy
(Based on Quantity of Administration)

Quantity of Administration	Digested in	Desired Benefit	Indications	Bowel status
Small Dose *(Hraswa Mātrā)*	6 Hours	Nourishment Immuno-potentiation *(Bṛṁhaṇa)*	Aged, Children Immuno-compromised	*Mṛdu*
Medium Dose *(Madhyama Mātrā)*	12 Hours	Bio-Purification *(Śodhana)*	Pre-procedural Bio-Purification	*Madhyama*
High Dose *(Uttama Mātrā)*	18 Hours	Disease Palliation *(Śamana)*	Persons ↑ appetite Psychosis (Unmāda) Epileptics *(Apasmāra)*	*Krūra*

Research area

The above table of contents may form the basis of some break through research.

(i) Daily consumption of *ghee* in small doses, serves the purpose of Immuno-potentiation, and wt. gain.

(ii) If at all, *ghee* has to be given for aged, children and Immuno-compromised individuals low doses should be preferred.

(iii) For Bio-Purificatory purpose medium doses are to be preferred (it has to be decided on the basis of *koṣṭha,* as described in section I).

(iv) The schedule of *Snehapāna* - followed during Bio-Purificatian does not change the body lipid levels as it is done only for very short interval.

(v) Therapeutic role of medicated/pl *ghee* in patient's with psychosis and Residual schizophrenia needs to be evaluated. The possible role cannot be ruled out, as medicated *ghee*/oils have the potential of crossing the BBB (lipid soluble substances can cross Blood Brain Barrier).

Massage (External Oleation)

Another important aspect of *Snehakarma* or oleation therapy is external application of oil, various types of which has been described in classical texts.

Massage therapy is a specialized therapy of Āyurveda indicated for,

1. Maintaining the positive health of individuals
2. Disease Palliation.
3. Before Bio-Purification (Method *Abhyaṅga* has been explained in Section I).

1. Abhyaṅga

2. Udvartana

3. Lepa

4. Mardana

5. Saṁvahana.

Various types of massage, their applicability and clinical indications

Type of Massage	Direction of Massage	Pressure exerted	Types	Substance used for Massage	Clinical Indications
Abhyaṅga	Away from Heart Downward ↓	Normal Pressure	-	Medicate oil/sesame oil	1. For Bio-Purification 2. For Massage in Children 5-12 yr young female, aged, HTN, IHD, RA, Insomnia
Unmardana	Towards Heart ↑ upward	Normal pressure	-	Oil	1. Healthy individual 2. Body ache, fatigue
Mardana	Away from Heart ↓ Downward	↑ High pressure	-	Oil	Healthy Individual Adult male
Saṁvahana	Gentle application of oil.	No pressure	-	Oil	Babies & child (1-5 years) Acute osteo arthritis, pregnant woman
Udvartana	Towards upward direction ↑	pressure ↑ -	Udvartana Udgharṣaṇa Utsādana	Powder Dry, powder Pastes	
Lepa	Application of Medicated paste	-	Pralepa Pradeha Ālepa	Cold, Thin paste Wet, Hot Between cold & Hot.	

Research Methodology In Pañcakarma

A well-planned and thoroughly conducted research in *Pañcakarma therapy* is the dire need of the day. It is needed to standardize different therapeutic techniques of *Pañca karma* and to set therapeutic standards, so that this unique therapeutic modality may be practised scientifically. However one would find that there are many limitations such as,

1. Lack of research skill and expertise.
2. Difficulty in undertaking and interpreting systemic reviews
3. Lack of appropriate methodology
4. Lack funding for research
5. Lack of technical academic Infrastructure.

General Considerations of Research

Those who, wish to perform, clinical research in the field of *Pañcakarma* should concentrate on the research methodology in general, and must possess thorough understanding about the basic norms of biomedical research. The research methodology should begin with, study & examination of,

i. Literature

ii. Terminology & Technology

iii. Development of Standard Protocols

iv. Knowledge about ethical considerations.

i. Literature Review

As system of Āyurveda has been developed before the advent of modern science and is based on a different principle of understanding, and has only recently been investigated in terms of today's science, it must be recognized that, a thorough literature survey should be the starting point for the clinical evaluation of *Pañcakarma,* a special therapeutic modality of

Āyurveda. Number of books are available both in Sanskrit and English (ref. Bibliography). The main purpose of the study should be to lay down important areas of research.

ii. Terminology and Technology

To ensure the reproducibility of a clinical study on *Pañcakarma,* the related terminology and technology should be clearly presented and exact protocols should be established for generalization.

(a) Glossary of Technical Terms : The exact sense of each terminology related to the requirement of research has to be specified. For example, the researcher should recognize the process of *Vaman,* not as a mere emesis, rather should know it as a process of Bio-purificatory therapeutic emesis . The purpose of bio-medical research involving human subjects must be, to improve diagnostic, therapeutic and prophylactic procedures and the understanding of the etiology and pathogenesis of disease.

In current medical practice most diagnostic, therapeutic and prophylactic procedures involve hazards. This applies especially to the bio medical research. Research activity on *Pañcakarma,* despite involving human subjects is all together safe. The continuous clinical studies conducted so far in the field of Āyurveda have revealed and documented the safe nature of these procedures. Thus the purpose of undertaking research in *Pañcakarma* is, not exactly to establish the safety mechanisms, but mainly to promote the efficacy.

iii. Standard Protocols

Developing standard protocols for performing research remains another important aspect of research. A protocol is a document, which states, the background, rationale and objectives of a trial and describes its design, methodology and organization including statistical considerations and the conditions under which it is to be performed and managed (As per guid. Acupuncture).

Following table examines the nature of *Pañcakarma* procedures from the perspective of safety.

Therapy	Process	Exact Procedure	Short coming/ risks	Precautions/ Investigations	Remarks
Snehan	Internal oleation	Administration of Medicated oil/Ghee 30 - 250 ml/day.	?Lipid abnormalities	Lipid profile	Safe, requires only observation
Swedan	Medicated fomentation	Application of Wet/Dry heat.	Salt-Water loss through sweat	Serum Electrolyte	Safe, needs only observation
Vaman	Therapeutic emesis	Producing emesis by herbal drugs.	Angina pectoris, Cardiac arrest, Haemetemesis, Pain Abdomen	ECG, X-ray Chest, Ba meal stomach, duodenum	Safe in Expert hands
Virecana	Therapeutic purgation	Administration of herbal drugs for purgation.	Electrolyte imbalance.	B.P, Pulse monitoring. O.R.S administration	Safe in Expert hands
Vasti	Enema	Enema with decoction/oil base.	Irritability, Disturbed bowel function and infection.	Material should be properly filtered and sterilized	Safe in Expert hands

Therapy	Process	Exact Procedure	Short coming/ risks	Precautions/ Investigations	Remarks
Nasya	Errhines	Administration of medicated oil through nostrils.	Irritability, Headache	Proper preparation	Safe in Expert hands
Śirodhārā	Head medication	Stream line liquid trickling over Head	Giddiness, Vertigo, Anxiety	Discontinue	Safe and requires Expert hands
Śirovasti	Head medication	Head loading with Medicated liquids	Head-neck aching	Proper posturing	Manageable
Piṇḍa sweda	Medicated Bolus massage.	Use of medicated hot massage.	Nil	Thorough rhythmic massage.	Safe.

The protocol should include

1. The title of the clinical study;

2. A clear statement of the objectives and purpose of the study;

3. The justification of the proposed study based on the available information including a consideration of the data on the subject from modern as well as Ayurvedic literature;

4. Site and the facilities where studies will be undertaken.

5. Name, address and qualifications of each investigator;

6. The type of study (e.g. controlled, open) and trial design (parallel groups, randomizations, methods and procedures);

7. Entry and exclusion criteria for study subjects (which may be based on diagnostic criteria of either modern or Āyurvedic medicine);

8. Number of study subjects need to achieve the study objective based on statistical considerations;

9. The subjective and objective clinical observations and laboratory tests which will be recorded during the course of the study;

10. Recording of adverse reactions;

11 . Control groups to be used;

12. Schedule of treatment, treatment period and time;

13. Criteria of other treatment that may or may not be given to the subjects during the study;

14. Methods of recording responses, methods of measurement, time of measurements and follow-up procedures;

15. Methodology of evaluation of results (e.g. statistical methods and reports of patients/participants who withdraw from the study);

16. Information to be given to the study subjects and informed consents.

17. Time schedule for completion of the study;

18. Medical care to be made available to the patients during or after the study that if necessary may override protocol treatment;

19. Ethical consideration and measures relating to the study;

20. Relevant communications with appropriate regulatory authorities;

21. List of literature referred to in the protocol.

Ethical Considerations

Any bio-medical research may not be universally accepted until it follows uniform ethical code of research. The ethics related to the research involve.

1. Safety of the patients involved in a research
2. Consent of the patient
3. Safety of the animals used in the study

Practice of *Pañcakarma* as a treatment modality is highly justifiable as per the guidelines of medical research involving human subjects. Some of the features are as follows.

"In the treatment of the sick person, the physician must be free to use a new diagnostic and therapeutic measure, if in his or her judgment it offers hope of saving life, reestablishing health or alleviating suffering.

The potential benefits, hazards and discomfort of a new method should be weighed against the advantages of the best current diagnostic and therapeutic methods.

In any medical study, every patient including those of a control group, if any-should be assured of the best-proven diagnostic and therapeutic method.

The refusal of the patient to participate in a study must never interfere with the physician patient relationship.

If the physician considers it essential not to obtain informed consent, the specific reasons for this proposal should be stated in the experimental protocol for transmission to the independent committee.

The physician can combine medical research with professional care, the objective being the acquisition of new medical knowledge, only to the extent that medical research is justified by its potential diagnostic or therapeutic value for the patient."

- According to the above norms, it is important for the investigator to explain about the potential benefits and hazards of the procedures to which he is subjected and written consent has to be taken from the patient in his own language.

Role of Health Authorities/Institution/Researcher

Govt. Level	Institution	Investigator
• Allocating sufficient funds for Research	Identifying main areas of research	Awareness of research methodology
• To provide Infrastructure	Collecting the data on current research pertaining to the Pañcakarma Therapy.	Ability to interpret current medical knowledge
• Supervising research activities at National level.	Developing standard protocols	Thorough knowledge of related concepts of Āyurveda/Modern Medicine
• To see that GMP* are strictly followed	Patient education.	Knowledge about Ethical guidelines

***GMP**-Good manufacturing practices for pharmaceutical companies

Long Follow up :

As mentioned earlier *Pañcakarma* has multiple benefits.

Disease Cure → Desired benefit

Rehabilitative → Immediate benefit

Immune Potentiation → Long term benefit

Hence to monitor the effect of *Pañcakarma* it is very essential to have long term followups. This is possible only at the Institutional level.

- Maintaining the proforma/protocols of every patient in computer data base.

- To collect patient's address to maintain contact at any time.
- Asking the patient to inform any change in his residential address.
- Calling these patients regularly for VĀSANTIK VAMAN.

Patient Education :

It is important on the part of Physicians, Investigators and Government to increase awareness about the potential benefits of *Pañcakarma* therapies.

Patient should be aware of general indications and contraindications of *Pañcakarma* procedures. This will enable the patients to willingly approach the physician. Some of the Āyurvedic institutions at Bombay undertake *"VĀSANTIC VAMAN"* subjecting hundreds of patients for *Vaman* therapy during the months of March & April, both from preventive and curative aspects.

Single Patient Studies

This category of clinical study is gaining popularity in recent times. At times, when patients may not follow the required bio-chemical analysis (from a research perspective) single patient studies may prove useful, in providing a lead for further research.

Guidelines for developing Biochemical and clinical Markers for *evaluation of Pañca karma therapies.*

Each and every therapy of *Pañcakarma* requires evaluation from following three aspects.

1. Markers for procedural success

1. Clinical
2. Biochemical

2. Markers for Specific disease cure

- Clinical grading scales for specific disorders
- Relevant biochemical analysis for estimating therapeutic effect

3. Parameters for assessing long term benefit

i. Immunoglobulin assessment IG_g levels before & after therapy.

ii. Reduction in free radicals and estimation of serum SOD (super oxide dismutase analysis)

iii. Changes in Neuro-endocrine hormones - Thyroid profile, ACTH, Androgens and Insulin levels.

Clinical grading scales for Assessing Immune enhancement

- Clinical grading scales for assessing Ojus scale (P. S. Mehara & R. H. Singh 1999)

- Clinical grading scales for assessing *Agni* (P. S. Mehara & R.H.Singh 1999)

- Feeling of well being

- Disease propensity after *Pañcakarma*

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Study Models For Routinely Performed Pañcakarma Procedures
Classical Pañcakarma

Type of procedure	Main area of research	Some of the clinical parameters to Assess	Bio Markers
***Snehan*/Oleation** (i) External Massage (ii) Internal Oleation	Various neuro-muscular and joint disorders. As a preparatory procedure for major *Pañcakarmas*	Symptom grading scale for signs of proper oleation	Changes in lipid profile 1. Serum lipids 2. Membrane lipids 3. Gastric & Intestinal secretion analysis
***Swedan*/Sudation** Medicated Fomentation	Rheumatoid arthritis Ankylosing spondylitis Osteoarthritis Motor neuron disease & other degenerative CNS diseases Cerebro vascular accidents	Inflammatory index Neuro muscular and cognitive functions	Changes In - Water & electrolyte status - RA titre - CRP titre - ESR - Nerve conduction - Cell permeability - Myography, CPK
Vaman Therapeutic Emesis	Bronchial asthma Psoriasis Eczema Urticaria Diabetes mellitus (NIDDM) Obesity & lipid disorders	**Immediate Benefits** Changes in specific disease scores **Long term benefits.** →Assessment of Ojas and Agni states. (Immunopotentiation, Feeling of wellbeing, Improvement in appetite, sleep patterns and disease propensity	→Mucopolysaccharride expulsion in vomitus →Histamine analysis in blood & vomitus →Immunoglobulin → T-Cell, B-Cell } PROLIFERATION

Virecana Therapeutic Purgation	Cerebro vascular accidents Rheumatoid disorders Bronchial asthma Skin diseases Hepatobiliary diseases	-Do-	Sterco-bilinogen as marker of pitta elimination in faeces
Basti Therapeutic Enema	Hypertension & I.H.D. Irritable bowel syndrorne Ulcerative colitis Cerebro vascular accident CNS degenerative diseases Chronic rheumatism	Specific disease soores	ECG changes Transmitters levels viz. ACT.Choline 5-HT etc. Colonic bacterial flora status.
Raktamokṣaṇa Blood Letting	Skin diseases	Specific disease scores	Biochemical analysis of blood sucked by leech / patients blood - TC, DC, HB, ESR - B. Urea - S. Creatinine - Immunoglobulins - Free radicals - Antigens - Enzymes
Saṁsarjana Post procedural dietic regimen	In all cases subjected to major *Pañcakarmas*	Assessing the status of Agni & Ojas	→D-Xylose excretion test for measuring the state of improved gut absorption

Keralīya Pañcakarma

Śiro Dhārā	→Chronic daily headache →Depressive illness →Insomnia, Headache →Psycho somatic disorders →Residual schizophrenia →Epileptic disorders →Anxiety disorders	→Visual analogue scale for assessment of pain →Hamilton anxiety rating scale (HARS) →Hamilton depressive rating scale (HDRS) →Reaction timer →Pulse monitor →Galvanic skin resistance (GSR) →Mental fatigue rate	Change in EEG
Śiro Vasti	→Generalised cerebral atrophy →Parkinsonism →Cerebro vascular accidents →Senile dementia →Alzheimers disease	→Adjustment Scale →Reaction timer →GSR →Pulse monitor →Disease score →Cognitive functions	- Neuro-transmitter levels. CT scan skull - EEG
Nasya Karma	→Chronic daily headache →Migraine →Chronic sinusitis	→Disease specific scores →Visual analogue scale for pain measurement	Radiological assessment Immunological assessment
Piṇḍa Sweda	→Motor neuron disease →Pseudo muscular hypertrophy & other Myopathies →Ankylosing spondylitis. →Chronic rheumatoid arthritis →Residual Hemiplegia / paraplegia	Inflammatory index, neuro-muscular and Cognitive functions	EMG Nerve conduction CPK levels Rheumatoid profile

GLOSSARY OF ĀYURVEDIC TECHNICAL TERMS

1. ***Ācāra Rasāyana :*** It is the non-pharmacological approach of getting *rasāyana* effects and is infact considered a type of *rasāyana* therapy. It consists of practising an improved code of socio-behavioural conduct i.e. *sadācāra* to achieve *rasāyana* effect on the body as well as on the mind. A person who adopts such a life style and practises *sadācāra,* achieves the *rasāyana* effects i.e. longevity, lusture, immunity, improved memory, intelligence etc. without the use of material *rasāyana.*

2. ***Abhiṣyandhi :*** A heavy oily or gelatinous food/drug substance. Its regular usage causes *Agnimāndya* and *Srotāvarodha.*

3. ***Acchapeya Sneha :*** The internal use of unctuous substances (fats, oils etc.) alone is known as *acchapeya sneha.*

4. ***Ādibala Pravṛtta :*** The diseases caused by inherent defect of either male or female reproductive element *(śukra* and *śoṇita* respectively), which form the primary factors of development of human being, are known as *ādibala pravṛtta* (genetic diseases).

5. ***Adhogata Sañcita Mala :*** The obstructed faecal matter in the lower portion of the rectum.

6. ***Agni :*** Literally *agni* means fire. This term is used in Āyurveda for various factors which participate and direct the course of digestion and metabolism in a living organism. Strength, health, longevity of life and all the living processes are dependent on *agni.* It provides energy necessary for normal functioning of innumerable vital activities in body. Therefore, all digestive and metabolic processes come under the action of *agni. Agni* is of thirteen types viz., seven *dhātvagnis,* five *bhūtāgnis* and one *jaṭharāgni.*

7. ***Agni Karma :*** A therapeutic thermal cauterization used as a final resort of treatment.

8. ***Agnimāndya :*** A stage of indigestion where food is not relished and digested.

9. ***Āma :*** The term *āma* literally means unripe, immature or undigested. *Āma* is produced in the biological system, due to hypofunctioning of various *agnis.* As the *agni* is deranged, the process of digestion and metabolism remains incomplete, leading to the accumulation of incompletely processed food components and abnormal metabolites (at the level of the *agni* involved) in the system. These undesired byproducts of digestion and metabolism are called *āma* and are injurious for health. *Āma* substances stagnate in the body and function as a foreign unwanted material, hence called *āma viṣa.* They act like auto-antigens and autotoxins. Majority of endogenous diseases begin with formation of *āma.* It has tremendous capacity to vitiate *doṣas, malas, dhātus* and disturb the homoeostasis by blocking the channels *(srotas).* The *doṣas, dhātus* and *malas* when associated with *āma* are called *sāma* which present with varying sets of manifestations.

Āma is a generic term for internal toxins produced by improper digestive and metabolic functioning.

10. ***Āmaya*** (Syn. *vyādhi, duḥkha)* **:** It is used in the sense of disease *(vyādhi),* because diseases are mostly caused by *āma.*

11. ***Antaḥ Parimārjana :*** It is the major therapeutic discipline in the practice of Ayurvedic medicine. By implication it concerns to Internal Medicine of Ayurveda. It consists of two broad categories of therapeutic procedures viz. 1. *Saṁśodhana* (biopurification) and 2. *Saṁśamana* (curative treatment). *Saṁśodhana karma* involves five fold purificatory measures popularly called *pañcakarma* therapy while *Saṁśamana karma* involves curative treatment by drugs, diets and specific regimen of life and life-style prescribed in view of the nature of a disease.

12. ***Anupāna :*** The term *anupāna* refers to vehicles or co-medications which are taken alongwith the doses of a given medicine for the purpose of accentuating the effect of the original medicine. The common *anupānas* are honey, hot water, ghee, *takra,* extracted juice of certain herbs used according to the disease, the *doṣas* and the nature of the main drug.

13. ***Anuvāsana Vasti :*** The administration of enemata

containing oily and unctuous substances, which is retained in the body to give desired therapeutic result is known as *anuvāsana basti.*

14. ***Apāna vāyu :*** Ordinarily it refers to the air to be expelled through anus i.e. flatus. In physiological sense it refers to the neurobiologic mechanisms responsible for excretory functions of gut.

15. ***Apathya :*** The dietary articles which are contraindicated for a person suffering from a particular disease, are known as *apathya.*

16. ***Ariṣṭa :*** *Ariṣṭa* is the fermented liquor obtained from the decoction of herbal drugs, This *ariṣṭa* is a self generated alcoholic preparation made out of decoction of herbs.

17. ***Ariṣṭa Vijñāna :*** The fatal signs and symptoms of a disease indicative of sure death are called *ariṣṭa lakṣaṇa.* The clinical discipline which deals with fatal signs, symptoms and prognostics is called *ariṣṭa vijñāna.*

18. ***Artha :*** The physical forces of the environment which are the objects *(viṣayas)* of the five sense organs are known as *arthas.*

19. ***Āsava :*** It is the pharmaceutical preparation of herbal drugs obtained by fermentation of the raw herbal drugs in an earthen pot for few days mixed with water alongwith sweetening and fermentating agents. *Āsava* is essentially a self generated alcoholic preparation.

20. ***Aśmarī :*** The disease related to bladder stone/renal calculi.

21. ***Āsthāpana Basti :*** It is a type of enema therapy, in which decoction of selected drugs is used for enema in order to eliminate the morbid *doṣas.* It optimises the normal function of organs and tissues of the body. This is essentially a non-oleus enema.

22. ***Ātaṅka :*** (Syn. *vyādhi, gada*) : The diseases are also called by this name *(ātaṅka)* as the diseased person has to make a lot of effort to survive.

23. **Atiyoga :** Excessive interactions or high intensity correlations.

24. ***Auṣadhaṁ :*** All those drugs which are prepared from herbs and are good for treatment of disease are known as *auṣadha*. The term is used to describe drugs in general.

25. ***Avaleha :*** Avaleha is the thick paste like extract obtained from continuous boiling of the decoction till the desired consistency is obtained. They are used after adding suitable amount of sugar and other additional drugs.

26. ***Ayoga :*** Persistently non-correlation, no interactions.

27. ***Āyu :*** 'Āyu' means life. Āyurveda is the Veda (science/ knowledge) of *āyu* or life. According to Āyurveda *āyu* is a complex four dimensional combination of śarīra (physical body), *indriya* (senses), *sattva* (psyche) and *ātmā* (consciousness) in materialistic state. The unity of above four components is transient one, therefore uninterrupted series of consciousness has been included in aforesaid definition.

28. ***Basti :*** Medicated enemata induced into rectum in treating various *Vāta* disorders. It is a component of *Pañca Karma* and is of two varieties viz. *Anuvāsana, Āsthāpana.*

29. ***Bahiḥ Parimārjana :*** It refers to various external physiotherapeutic measures used for the treatment of different kinds of ailments. Some of the practices used under this category are *snehana* (oleations), *swedana* (fomentation), *gaṇḍūṣa* (medicated gargles), *udvartana* (application of pastes), *abhyañjana* (application of powders) etc.

30. ***Bhagandara :*** A type of Fistula in ano.

31. ***Bhasma :*** *Bhasma* is the ash powder of metals and minerals prepared by elaborate procedures involving, *śodhana, māraṇa* ete.

32. ***Bhāvanā :*** It is the process of adding liquids in some recipes and triturating it till the latter dries up. It is supposed to potentiate the action of the original drug. A wide variety of liquids of vegetable and animal origin like juices of herbs, decoctions, oils, milk, urine etc. are used as *bhāvanā dravya.*

33. ***Bheṣajam*** (Syn. *auṣadhaṁ* (Refer there) : cikitsā) ***:*** The word *bheṣajaṁ* means that which conquers the disease. The term is used to describe drugs in general. Sometimes, also used as synonym of *cikitsā* as a whole.

34. ***Bhūtāgni* :** There are five kinds of *bhūtāgnis* corresponding to the five bhūtās (protoelements). For each type of *bhūta*, there is specific *agni*, which acts at molecular level to bring about transformation of respective *bhūtas* present in dietary articles, so that they can be incorporated in sub cellular structures. *Bhūtāgni* thus refers to the fine molecular metabolism.

35. ***Catuṣpāda* :** This refers to the four major components of the medical management to be considered for successful completion of treatment. They are : (1) *Bhiṣak* or the physician, (2) *Dravya* i.e. drugs, diet and all other material facilities needed in treatment, (3) *Upasthātā* i.e. attendants and nursing personnel and (4) The *Rogī* or the patient himself.

36. ***Cikitsā* :** The term *cikitsā* is derived from the root *'Kit rogāpanayane'* i.e. to adopt calculated measures for the removal of diseases. The *cikitsā*, according to Āyurveda, comprises of *rogāpanayana* or measures for eradication of disease factors, *ruk pratikriyā* or measures for the treatment of the disease and *roganidāna pratikāra* i.e. removal of causative factors of the diseases.

37. ***Cikitsya Puruṣa* :** Literally this term means the subject of *cikitsā* or treatment. The subject of *cikitsā* is the living being, who is composed of the *sattva* (mind), *ātmā* (soul) and *śarīra* (body), he is the conscious agent, he is the subject matter of Āyurveda and indeed this science has been promulgated for him. Hence the living human being is termed *cikitsya puruṣa* because it is with reference to him that treatment will have to be planned and executed.

38. ***Daivabala Pravṛtta* :** Diseases which are caused by forces beyond human control, are known as *daivabala pravṛtta.* These are considered to be due to curses, divine wrath or displeasure, mystic power of charms and spells mentioned in Atharva Veda.

39. ***Daivavyapāśraya Cikitsā* :** It is one of the three principal forms of therapy in Āyurveda, which involves such spiritual practices as *mantras* (incantations), *auṣadhi* (sacred herbs), *maṇi* (precious gems), *maṅgala* (propitiatory rites) including oblations : *bali, homa* (sacrifices), niyama (vows),

prāyaścitta (ceremonial penitence), *upavāsa* (fastings) and *svastyayana.*

40. ***Deha :*** This term is derived from the root *'Diha vardhane'* meaning 'to grow' or 'to develop'. It conveys the idea of underlying anabolic processes, growth and development. It is used to describe whole human body to emphasis this particular nature.

41. ***Deha Prakṛtī*** : *Deha prakṛti* or *doṣa prakṛti* is the psychosomatic constitution and the sum total of physique, physiology and psyche of an individual determined by the range of proportion of the three *doṣas* i.e. *vāta, pitta* and *kapha.*

42. ***Dhanvantarī :*** The physician of Gods who emerged at the time of churning of the ocean with a pot of a ambrosia.

43. ***Dhātvagni :*** There are seven kinds of *dhātvagnis* corresponding to the seven types of *dhātus* (body tissues) which are responsible for metabolism in their respective tissues. They specifically bring about the transformation of appropriate nutrient substances present in potential form in *'āhāra rasa'*. Each kind of agni, being capable only of synthesising and assimilating the constituents corresponding to the respective *dhātus* i.e. tissues. Thus the *dhātvagni* refers to the entire spectrum of tissue metabolism.

44. ***Doṣa :*** *Doṣas* are the entities which are part of the life process and comprise *prāṇa*. They are responsible for *prakṛti* and *vikṛti* i.e. normalcy and abnormalcy in the living being. They are termed as *doṣa* because of their inherent tendency to vitiate and to get vitiated. They exist only in living body and cease to exist after death. There are 3 bodily *doṣas* namely *vāta, pitta, kapha* and 2 mental *doṣas* i.e. *rajas* and *tamas.* They represent the entire biological and bioenergetic functions of the body in the same way as the Sun, Water (Moon) and the Air govern the functioning of the universe. They have functional relevance to *pañca mahābhūtas* and are likely to be monitored through the theory of *sāmānya* and *viśeṣa* i.e. homology vs heterology.

45. ***Doṣabala-pravṛtta :*** Diseases caused by action of bodily *tridoṣas* (*vāta, pitta, kapha*) and/or *mānasa doṣas* (*raja, tama*) are known as *doṣabala-pravṛtta.* The vitiation of *doṣas* is mostly due to indulgence in unwholesome diet, behaviour and life style.

46. ***Doṣa-dūṣya-sammūrcchanā :*** The interaction between the *doṣas* and the *dūṣyas* (functional factors with the basic structural entities of the body) is technically termed as *Doṣa-dūṣya-sammūrcchanā*. It is clinically manifested as disease state, depending upon the nature of the involved *doṣa, dūṣya, organ* and system in the body.

47. ***Doṣa vikṛti :*** Defective humour responsible in causing the disease. May have multifacet cause and wide range of clinical manifestations.

48. ***Dravya :*** Refers to an entity which has essentially some properties *(guṇa)* and certain actions (*karma*). The primary causal *dravyas* are nine in number namely the Five *Mahābhūtas*, the Soul, the Mind, the Time and the Space. The entire universe is primarily made up of these nine *kāraṇa dravyas.*

49. ***Gada :*** *Vyādhi* or disease is referred to as *Gada*, as a multitude of causes engender disease.

50. ***Garbha Śārīra Prakṛti :*** The genetically determined *prakṛti*, which is produced at the earliest phase in the foetus has been termed as *garbha śarīra prakṛti* by *Suśruta*. The primary *deha* and *mānas prakṛtis* are essentially *garbha śarīra prakṛtis* and do not change in one life time.

51. ***Guḍa :*** Old jaggery used as a vehicle or *Anupāna* for giving medicines in the management of different diseases. It is also used as a component of many medications and food articles.

52. ***Guṇa :*** The term *'guṇa'* refers to the physico-chemical and also the pharmacodynamic properties of drugs and dietary articles, which are responsible for the action of the respective drugs/diets in the body. A total of 41 *guṇas* are described in Āyurveda but out of these twenty are more important. Some of these are *guru* (heavy), *laghu* (light), *ślakṣṇa* (smooth), *viśada* (clear), *rūkṣa* (dry), *snigdha* (oily), *śīta* (cold), *uṣṇa* (hot) etc.

53. ***Guṭikā*** (Syn. *vaṭikā, vaṭī*) ***:*** (See *vaṭikā*)

54. ***Janmabala-pravṛtta :*** The diseases caused due to errors in the conduct of the mother during pregnancy are known as *janmabala pravṛtta* (congenital diseases). Few examples of this group of diseases are congenital dwarfism, deafness, blindness, dumbness.

55. ***Jāta Śārīra Prakṛti :*** Though, the genetically fixed *prakṛti* cannot change in one's life time, but may undergo some modifications due to influence of environmental factors like *deśa, kāla, jāti, vaya* etc. These types of acquired human variations are called *jāta śarīra prakṛti* i.e. acquired constitution.

56. ***Jaṭharāgni :*** It is the master *agni* i.e. the digestive fire which is located in the gastrointestinal tract more specifically between the *āmāśaya* and *pakvāśaya.* It is responsible for the digestion of food, transformation of all the *'Pāñcabhautika* food materials to readily utilisable form for *dhātus. Jaṭharāgni* is also responsible to govern and maintain the function of remaining other *agnis.* The seven *dhātvagnis* and five *bhūtāgnis* are dependent on *jaṭharāgni.*

57. ***Jāṭharāgni :*** Digestive juices of stomach and intestines responsible for the digestion of food.

58. ***Jalūkāvacāraṇa :*** The blood letting procedure by using leeches/popularly used in treatment of a range of diseases.

59. ***Ikṣurasa :*** Sugar Cane Juice.

60. ***Kajjalī :*** *Kajjalī* is the black mixed powder prepared by repeated triturating of purified Mercury with Sulphur. This is the most primitive mercurial preparation used in Āyurvedic practice.

61. ***Kāla*** : *Kāla* means Time, seasonal and climatic variations in the external environment.

62. ***Kapha :*** *Kapha* is one of the three *śārīra doṣas.* The term *kapha* literally means that it is the product of water. A common synonym of *kapha* is *'sleṣmā'* which literally means to keep together. It is the most stable *doṣa* among the three *doṣas. Kapha,* in its normal state of functioning represents a potential source of strength and resistance against diseases. It is the binder of all structures of the body, it promotes unctuousness in the body and is responsible for body bulk, compactness and physical strength besides the mental qualities like forbearance, fortitude, greedlessness ete.

63. ***Karma :*** Volitional and non-volitional actions are called karma.

64. ***Karma Puruṣa*** (Syn. *Cikitsya puruṣa* ; see there) : ***Suśruta*** has called *cikitsya puruṣa* as *karma puruṣa.* Literally

karma puruṣa means individual of action which is described as outcome of the union of *ātmā* with five *mahābhūtas*. All therapeutic measures, such as surgical operations, application of *kṣāra* (caustics), *agni* (thermocautery), and the administration of medicines pertain to *karma puruṣa* alone. The same is the *ṣaḍdhātvātmaka puruṣa* described by Caraka comprising of *pañca mahābhūta* and *avyakta brahma.*

65. ***Kāya :*** The term *'kāya'* is derived from the Sanskrit root *'Ciñcayane'* meaning to collect. The term 'collection' here refers to food or nutrition. The term *'kāya'* thus refers here the meaning that the body takes in food, digests, absorbs, metabolises and assimilates it in a selective manner. In other words *kāya* means building-up of the body with food. Thus it comprehends the whole process of metabolism. It is also used in the sense of the whole body. Sometimes, it is used in the sense of *jaṭharāgni* or *antarāgni* too.

66. ***Kāyacikitsā :*** It is the foremost branch of *Aṣṭāṅga* Āyurveda, (Eight branches of Āyurveda) which deals with diseases pertaining to *śārīrika* i.e. whole body and *mānasika* or the psychic components, as these two are stated to be the seats of all diseases. *Kāyacikitsā* according to Suśruta; comprises the treatment of such generalised internal diseases as *jvara* (pyrexias). etc. Kāyacikitsā also refers to the treatment of disease caused due to disturbances of *antarāgni,* as most of diseases and disease syndromes in Āyurveda are thought to be produced due to impairment in functioning of *agni* i.e. metabolism.

67. ***Kriyākāla*** : *Kriyākāla* literally means 'time for action'. The concept of *kriyākāla,* described by Suśruta, deals with the mode and stages of development of disease in terms of the sequence of *tridoṣika* rhythm. It has been described to indicate the importance of these stages from treatment point of view. It is very essential for early diagnosis, prognosis and for adopting timely preventive and curative measures. Out of six *kriyākālas* first three viz., *sañcaya, prakopa* and *prasara* are subclinical stages while the later three viz., *sthānasaṁśraya, vyakti & bheda* are clinical stages of the pathogenesis.

(A) ***Sañcaya :*** *Sañcaya* means accumulation of the *doṣas* in their own natural sites. The *doṣas* in this stage increase

quantitatively their quality remaining normal. It is the first stage of *kriyākāla* with vague and illdefined symptomatology alongwith some features characteristic of the increase *of doṣa* involved. It is characterised by aversion towards similars and attraction towards opposite qualities of diet, drug etc.

(B) ***Prakopa :*** It is the stage of excitation of *doṣas* in which the accumulated *doṣas* start getting qualitatively vitiated and get ready to move from their natural sites being excited by the appropriate aetiological factors.

(C) ***Praśama*** : This refers to the return of the *doṣas* to normalcy and to their normal sites after their excitation *(prakopa).* This is the state of spontaneous remission or regression caused by withdrawal of causative factors or due to treatment given.

(D) ***Prasara*** : The term *'prasara'* means to spread. It is the third stage of *kriyākāla,* in which the vitiated *doṣas* spread over and extend to other parts, organs and systems of the body in all directions. *Prasara* may involve one, two or all the three *doṣas* together alongwith *rakta.* The *doṣas* in this stage may remain quiscent or may pass on to *sthānasaṁśraya,* depending upon the degree of *prakopa.*

(E) ***Sthānasaṁśraya :*** This term means getting localised at one place. It is the fourth stage of *kriyākāla,* in which the excited spreading *doṣas,* having extended to other parts of body, start getting localised at certain sites due to *srotovaiguṇya* or a pre-existing defect of the part involved. Localisation of *doṣas* precipitates *doṣa-dūṣyasammurchanā* (interaction of vitiated *doṣas* with *dūṣyas* or local tissues). This is the stage of start of real disease and is associated with appearances of prodromal symptoms i.e. *pūrva rūpa.*

(F) ***Vyakti :*** It is fifth stage of *kriyākāla* which characterises by full manifestations of signs and symptoms of the fully developed specific disease. The *vyaktāvasthā* refers to the completion of the *sthānasaṁśraya* stage of the disease.

(G) ***Bheda*** : It is the sixth and last stage of *kriyākāla.* If the disease is not properly treated at the stage of *vyakti,* it may become sub-acute, chronic or incurable on account of extensive damage sustained or irreversible structural changes having taken place due to neglect of early diagnosis and prompt

treatment. The disease in this stage leads to the development of complications and becomes itself the cause for other diseases.

68. ***Kṣāra :*** The alkaline substance capable of producing 'क्षरण' - cutting or 'क्षणन' - burning sensation in the body.

69. ***Kṣārasūtram :*** A medicated thread impregnated with the paste of Euphorbia nerefolia and Turmeric powder.

70. ***Madhura :*** Sweet Taste.

71. ***Malas :*** The term *'mala'* is defined as impurities or waste products. Digestion of food produces *rasa* and *mala.* The *rasa* (chyme) is absorbed in the blood and nourishes the body. *Mala* represents a wide variety of excretable substances produced in the body, including *tridoṣas* and *sapta dhātus,* in their abnormal state of functioning.The *mala* represents waste products, in general, of which some may be utilised by the body for certain functions and others may be discarded. The *malas* comprise of *śakṛt* or faeces, *sweda* or sweat and *mūtra* or urine, *viṭ sneha* (faecal fat). etc. The *malas* at certain level are equally important for proper functioning of the body as are *doṣas* and *dhātus.*

72. ***Manas :*** The word *'manas'* is derived from the Sanskrit root *'Man'* and *'Asan'* the suffix following it. It is approximately equal to the English word *'mind',* which is defined as the faculty through which we ponder and concise. The word *manas* is etymologically derived as 'the strength' or abilities which are responsible for experience of agony, wish and will, inclination and dislike, effort, endeavour, knowing, investigation, discussion etc. *Manas* is controller of all senses i.e. cognitive and conative organs, and the whole body. It receives the objects of senses and the power of all senses are derived from *manas.* That is why the *manas* is some times described as transcending the senses i.e. *atindriya. Manas* is the seat of all the conscious, subconsciousness and unconscious activities of the organism. It is the instrument for experience of self *(ātman)* and an internal organ through which the self-recollects, infers, doubts and dreams etc.

73. ***Mānasa Doṣas :*** The psychic forces which are responsible for producing mental disorders, are known as mānasa *doṣas.* Out of the three *triguṇas.* the *sattva* has not been

admitted as *mānasa doṣa* because it is considered to be without any taint and represents *kalyāṇaśāśvat* i.e. all benevolent aspect of the mental state. Āyurveda regards the remaining two *guṇas* viz., *rajas* and *tamas* as the two *mānasika doṣas* at par with the three bodily *doṣas* namely *vāta, pitta* and *kapha.*

74. ***Mānasa Doṣa Vikāras :*** *Rajas* and *tamas*, being two psychopathogenetic factors, affect the mind and produce certain pure and primary mental disorders known as *mānasa doṣa vikāras* such as *kāma* (lust or desire), *dveṣa* (envy), *krodha* (anger), *lobha* (greed), *māna* (arrogance), *bhaya* (fear), *udvega* (anxiety), *moha* (delusion), *mada* (neurosis), *śoka* (sorrow), *cintā* (grief), *harṣa* (exhilaration) etc. Āyurveda considers them as primary mental diseases.

75. ***Māraṇa :*** *Māraṇa* is the oxidation method of different minerals, to render them in the form of *bhasma* (ash-powder), which is used for medicinal purposes. Some minerals may be used for medicinal purposes only after *śodhana* (purification) but metals; gems etc. must be subjected to *māraṇa* (oxidation) process.

76. ***Marma :*** The vital organs/parts/sites in the body which when injured causes death or excruciating pain. There are such 107 *marmas* in the body some of which (19) are *sadyaḥ prāṇahara* (instantaneous killers), some (33) are *kālāntara prāṇahara marmas* (causing death after some time), some (3) are *viśalyaghnakara* marmas (surgically important); some (44) *vaikalyakara marmas* and some (8) are *rujākara marmas* (painful).

77. ***Māṣa :*** A particular grain used to relieve the constipation and also to improve the digestion.

78. ***Mātṛja Bhāva :*** The genetic behaviour of the ovum.

79. ***Mātrā Basti :*** It is a type of standard oleus enema which can be used as a routine measure without complication in diseases of *vāta* system. Because of its standard compositions it can be administered at any time and in all seasons. It is harmless and requires less amount of fatty substance digestible within six hours. It promotes strength and weight of the body easily eliminates waste products of the metabolism.

80. ***Mithyā Yoga :*** Perverted correlations; aberrant interactions.

81. ***Nasya*** (Syn : *Śirovirecana*) : Administration of medicaments such as medicated oils or powders of medicines, through nasal route to get desired clinical response like sneezing and cleansing of the head, is known as *'nasya'* or *'sirovirecana'*. It is one of the five major procedures of Pañcakarma therapy.

82. ***Nidānārthakara Roga :*** The diseases which serve as cause for generation of some other diseases are themselves known as *nidānārthakara roga.* In some instances they subside after development of the latter while in some cases they may co-exist leading to the presence of multiple diseases in the same patient at the same time *(vyādhi saṅkara).*

83. ***Nirūha :*** It is a major category of *Basti karma* where enema is given with decoction of herbs without oil or ghee in it.

84. ***Ojas :*** *Ojas* is the quintessence of all *dhātus.* The qualities and functions of *ojas* are similar to *śleṣmā (kapha).* It is responsible for providing biological strength *(bala)* to the various parts of the body and protection of the body against diseases *(vyādhikṣamatva).* It is permeated to the entire body by the channels of transport *(daśa mahāmūlā dhamanis). Ojas* is of two types viz. *para* and *apara. Para ojas* is located in the heart and measures 8 drops while *apara ojas* is spread all over the body and measures half an *añjali.* The ojas corresponds to immune function of the body.

85. ***Pañca Gavya*** (The five cow product) : Milk, curd, *ghee*, urine and the dung of the cow are collectively called *pañca gavya.* They have many medicinal as well as auspicious applications in Āyurvedic medicine and certain religious rituals.

86. ***Pañca Mahābhūta :*** They are the five fundamental categories of matter described in ancient Hindu physics representing the five basic qualities of matter constituting all living and non living entities. They correspond to ether or space *(ākāśa)* air *(vāyu)*, fire or radiant energy *(agni),* water or cohesive factor *(jala)* and earth or mass *(pṛthvī).*

87. ***Pañca Tanmātra :*** The subtlest and minutest indivisible unit of respective *pañca mahābhūtas* which exist as trace properties and are beyond the perception of five senses, are called *tanmātrās.* They function as receptor matter in the respective *jñānendriyas* and also exist in the subtle body i.e. the

liṅga or *sūkṣma śarīra*. The five *tanmātrās* are *śabda* (sound), *sparśa* (touch), *rūpa* (vision), *rasa* (taste), and *gandha* (smell), representing the *ākāśa, vāyu, teja, jala* and *pṛthvī mahābhūtas* respectively.

88. ***Pañcavidha-Kaṣāya-Kalpanā*** : These are the five basic categories of pharmaceutical preparations of herbal drugs most commonly used in Āyurveda. The term *'pañca-vidha'* literally means five types. The herbal medicines are prescribed in the form of *svarasa* (fresh expressed juices), *kalka* (paste), *cūrṇa* (powder), *kvātha* (decoction) and *phāṇṭa* (infusion) or *śita kaṣāya* (cold infusion). In addition to these five basics there are several other forms of preparations prevalent in Āyurvedic practice.

(i) ***Svarasa :*** *Svarasa* is the juice obtained from a fresh green vegetable drugs by crushing it and then expressing juice by straining.

(ii) ***Kalka :*** It is the paste generally prepared by grinding the fresh herbal drug with a pestle and then making a paste. It may also be prepared from dry drugs by adding water to it.

(iii) ***Cūrṇa :*** It is the fine powder prepared from a dry drug. The required drug or a mixture of drugs is ground and the fine powder is obtained by filtering the same

(iv) ***Kvātha :*** It is the decoction obtained by boiling one part of the *yavakuṭa cūrṇa* (coarse powder) of a vegetable drug with sixteen parts of water till the latter is reduced to one fourth. The fresh decoction is prepared daily.

(v) ***Śīta Kaṣāya :*** It is the cold infusion obtained by putting one part of the crushed herb in six parts of water over night then obtaining the cold extract in the morning after filtration.

(vi) ***Phāṇṭa :*** Phāṇṭa or infusion is the fluid obtained by putting one part of powdered herb in eight parts of hot water keeping it at room temperature for some time to make it cold there after straining it through a cloth or a mechanical filter.

89. ***Pañcīkaraṇa :*** *Pañcīkaraṇa* is phenomenon of mixing of the five subtle *tanmātrās* to form the stable *pañca mahābhūta*. Each *mahābhūta* is composed of the mixture of all the five *tanmātrās* in a particular proportion with a relative predominance of the concerned one. The *pañcīkaraṇa* is a complex phenomena

of higher physics where different *tanmātrās* function as subtle electromagnetic entities with different potentials.

90. ***Pathya :*** The specific diet compatible for the health of a person suffering from a specific disease, which is homologous to the channels *(srotasas)* of the body is known as *pathya*.

91. ***Pathyāpathya :*** It is the dietary consideration in the management of different ailments. Āyurveda puts great emphasis on the prescription of appropriate vegetarian and non-vegetarian diet alongwith medications which are specifically advocated and or contraindicated in patients suffering from different diseases.

92. ***Paramānnam :*** A Sweet rice dish usually prepared on festivals/special occasions.

93. ***Paścāt karma :*** The post operative measure. It also refers to the dietary regimen prescribed after *Saṅśodhana* Karma.

94. ***Piṣṭi :*** Anything ground/powdered/crushed usually used to prepare a cake.

95. ***Pitta :*** It is one of the three *doṣas*, which is considered as the byproduct of blood. All the chemical activities and endocrine functions, digestion and metabolic activities operating in the living body are ascribed to the *'pitta'* system of the body. It confers complexion to the body, incurs digestion and metabolism and is responsible for production of appetite, thirst, body heat, vision and is also responsible for intelligence and courage.

96. ***Prabhāva*** : *Prabhāva* is the technical term used to describe one of the specific modes of drug action. Ordinarily according to Āyurveda a drug produces effect in the body on the basis of its *rasa* or taste, guṇa or physicochemical properties, *vīrya* or potency and *vipāka* or drug metabolism. All these happen in terms of the *pāñcabhautika* composition of the drug. However, actions of some drugs are not explainable on the basis of above mentioned attributes. In such cases the action is the specific response probably because of some specific pharmacologically active chemical constituent of the drug, this category of action is called *prabhāva*.

97. ***Pradhānakarma :*** The actual operative procedure. Also refers to the main Five *Karmas* of *Pañcakarma* therapy.

98. ***Pracchāna :*** A cover of punctures used in the process of blood letting.

99. ***Prakṛti*** : *Prakṛti* is the matrix of the whole psychophysical universe. It is the equilibrium of *sattva* (essence), *rajas* (energy) and *tamas* (inertia), which form the ultimate ground for all creation. *Prakṛti* incorporates the whole universe within it, in its potential form, which becomes manifested only when the evolution of nature takes place due to imbalance of *triguṇas* and interaction with *puruṣa,* the conscious factor. (Some times the word *prakṛti* is also used to describe the Traits of genetically determined normalcy or constitution of an individual being).

100. ***Prakṛtisthāpana :*** It means restoration of *prakṛti* or normal healing state in the body. It is used as synonym of *cikitsā* or treatment. It literally means restoration of normalcy.

101. ***Prāṇa*** : *Prāṇa* is the life force present in all living beings. It may be compared with the electromagnetic energy flowing in the organism which is responsible for sustenance of all life functions. *Suśruta* mentions 12 seats of *prāṇa* namely *agni, soma, vāyu, sattva, raja, tama, pañcendriyas* and *bhūtātmā* where the *prāṇika* energy manifests the most. One of the five *vāyus* is also called *prāṇa* vāyu because of its vital role in maintenance of life process. In Yoga tradition too *prāṇa* is considered as the life force, *prāṇāyāma* is the *yogika* practice which is used for promotion of *prāṇa.*

102. ***Puruṣa :*** *Puruṣa* or Self is a transcendented being which has no form, size or shape. It is eternally conscious, pure and liberated. It is the ultimate knower and seer. The *puruṣa* is the transcendental reality above space, time and causal conditions, it also transcends all the psychological phenomena. The creation of universe takes place only when the conscious *'puruṣa'* (self) interacts with unconscious *prakṛti* (nature). Some times the word *puruṣa* is also used for the living entity i.e. the *āyu,* the same is also called *cikitsya puruṣa.*

103. ***Pūrva Karma :*** The term *'pūrva-karma'* refers to

preparatory treatment/measures which precede the main specific therapy. *Snehana* (oleation) and *swedana* (fomentation) are the two *pūrva karmas* in reference to *pañcakarma* therapy i.e. five-fold purificatory therapies. *Pañcakarma* therapy should not be undertaken straightaway (without *pūrva karmas)* because they can not eliminate the *doṣas* situated in tissues effectively.

105. ***Puṭapāka :*** *Puṭapāka* is the process used to obtain the expressed juice of the such herbal drugs which are hard and less juicy and where it is difficult to get fresh juice by ordinary means. These drugs are reduced to a paste, which is wrapped up in leaves firmly tied, covered with a layer of clay and roasted on fire. When the clay assumes bright red colour, then the ball is taken out from fire, broken and the roasted drug paste is expressed to obtain the juice. This is called *puṭapāka svarasa.*

106. **Rajo *Guṇa*** : *Rajas* has two basic characteristics i.e. *calatva* (activity) and *upaṣṭambhakaṁ (pravartaka, preraka).* It is responsible for activity. *Rajas* acts as stimulus for bringing about and maintaining activity in all animate and inanimate objects. Other two *guṇas* viz., *sattva* and *tamas,* can not perform their function without being charged by the *rajas. Rajas* leads a life of enjoyment and restless effort..It results in sorrow, pride, envy etc. which are its different forms.

107. ***Raktamokṣaṇa :*** *Raktamokṣaṇa* means blood-letting as a purificatory therapy. It is counted among *pañcakarma* by Suśruta. The detailed descriptions are available about indications, contraindications, procedures etc. of *raktamokṣaṇa* in Āyurveda.

109. ***Raktapitta*** (haemorrhagic disorders) *: Raktapitta* is an important disease described in Āyurveda caused by vitiation of *rakta* (blood) and *pitta,* essentially characterised by abnormalities of blood simulating coagulopathies and haemorrhagic disorders.

110. ***Rasa*** : The term *'Rasa'* refers to the direct and immediate action of a drug when it comes in contact with the sense organ of taste i.e. tongue. The existance of different types of *rasas* (tastes) in different substances is attributed to their varying *pāñcabhautika* composition. The *'Rasas'* of different substances have definite relationship to the increase or decrease

of *doṣas* and they have certain actions in the body. The drugs are selected keeping in view their *rasas* (tastes) and the predominant *dosas* in the body of the patient. There are six types of *rasas* (tastes) viz., *madhura* (sweet), *amla* (sour), *lavaṇa* (saline), *tikta* (bitter), *kaṭu* (pungent) and *kaṣāya* (astringent). In other contexts the word *rasa* also applies to nutrition, to the end product of digestion of food, to the first *dhātu* (tissue), to the principal metal drug, Mercury etc.

111. ***Rasauṣadhi*** : *Rasauṣadhis* are medicaments comprising of mineral and metallic constituents particularly mercurials. *Pārada* or mercury is considered the king of the therapeutically usable metals and also called *rasa.* Hence all formulations containing *rasa* or mercury are called *rasauṣadhis.*

112. ***Rasa Śāstra :*** The branch of Āyurveda dealing with processing and therapeutic use of metals, minerals and allied products is called *Rasa Śāstra.*

113. ***Rasāyana :*** *Rasāyana* is one of the eight clinical specialities practised in Āyurveda, which consists of specialised therapeutic procedures : use of certain drugs and measures which prevent or retard the aging process, impart longevity, immunity and resistance against diseases, improve mental faculties, cognitive abilities and improve vitality and lusture of the body. Specific *rasāyana* drugs are also used for the treatment of specific diseases. The latter category is termed as *naimittika rasāyana.* The *rasayanas* act as adaptogenic agents through nutraceutical dynamics.

114. ***Roga*** (Syn : *vikāra, vyādhi, gada, ātaṅka* etc) ***:*** Roga is defined as the condition which pains. Disease states are known for pain of varying degrees and intensities. Hence the term *'roga'* is used to designate *vikāra* (disease).

115. ***Samprāpti :*** *Samprāpti* is the phenomenon of production of a disease comprising of the process of vitiation *of doṣas,* their spread all over the body, their localisation at morbid sites, involvement of local tissues (i.e. *dhātus* as *dūṣyas*) and manifestations of signs and symptoms of a particular disease. *Samprāpti* encompasses the entire spectrum of bodily changes both in clinical as well as subclinical stages of disease process. Ordinarily Āyurvedic term *'samprāpti'* compares to the English term 'pathogenesis'.

116. ***Saṁśodhana :*** *Saṁśodhana* means bio-purification of the body by therapeutic cleansing of the channels (gross to subtle). It includes all those forms of therapies which are aimed at radical removal of the morbid factors from the body. It comprises of three broad categories of measures (a) *Antaḥparimārjana* or internal purification such as the *Pañcakarma* therapy, (b) *Bahiḥparimārjana* or external purification such as oleation, fomentation, bath, massage etc. (c) *Śastra praṇidhāna* or surgical intervention.

117. ***Saṅghātabala-pravṛtta :*** Diseases caused by *abhighāta* (trauma) by external means or due to over exertion are known as *saṅghātabala-pravṛtta*. This group of diseases are included under *ādibhautika*.

118. ***Saṅkrāmaka Rogas :*** The diseases which are known to spread from one person to another by various means being contagious in nature, are called *saṅkrāmaka rogas* (communicable diseases). They may assume the form of an endemic. Sexual contact (*prasaṅga*), body contact *(gātra-saṁsparśa),* inhalation *(niḥśvāsa),* eating together *(sahabhojana),* sleeping together (*saha-śayyā*) and using of the clothes, towels, garlands, cosmetics of others etc. have been identified by Suśruta as the means of spread of such diseases. Skin diseases, fever, tuberculosis and conjunctivitis have been sighted as examples.

119. ***Sapta Dhātu :*** The term *'dhātu'* literally means to support or to nourish. It is referred for describing the physiology of basic nutrition and structural architecture of the body. *Dhātus* promote the growth of the body and support the mind and body both. These seven *dhātus* corresponding to seven basic tissues of the body viz., (1) circulating Rasa (plasma), (2) *Rakta* (blood), (3) *Māṁsa* (muscular, tissues), *(4) Meda* (adipose tissue), (5) *Asthi* (bone tissue), (6) *Majjā* (bone marrow) and (7) *Śukra* (reproductive tissue & semen). These are constantly produced, nourished, destroyed and reformed in the same order. *Tridoṣas* are also sometimes referred as *dhātus* as they also sustain the body in their normal state of functioning.

120. ***Śarīra :*** The term *'Śarīra'* is derived from the root *'Śṛśaraṇe'* meaning to be rendered to pieces and conveys the

meaning of underlying catabolic process. The term is commonly used to describe human body in view of its ultimate mortal nature.

121. ***Śastra :*** A word derived from root *'Sas'* means to cut/ slaughter. An instrument used to cut in the process of surgery.

122. ***Śastra-praṇidhāna :*** All aspects of therapy related to surgical practice in Āyurveda comes under the realm of *śastra praṇidhāna.* Āyurveda describes a well planned and systematic surgical discipline, which includes the description of sharp and blunt instruments, splints and bandages for local application, sixty types of treatment of wounds, description of classification and treatment of burns, fractures, technical description of many surgical procedures like rhinoplasty, caesarian section etc. Suśruta Saṁhitā is the classical authentic text on surgical discipline of Āyurveda.

123. ***Sattva Guṇa :*** The word *'sattva'* signifies whatever is pure, real and fine. The word 'sat' means real or existant and perfect. Thus *sattva* refers to universal reality, it is also a factor which is responsible for clarity, goodness and happiness. *Sattva guṇa* is considered *laghu* (light) and *prakāśaka* (enlighted, glittering). Other characterstics of *sattva guṇa* of the *manas* are mercy, endurance, faith in god, intellect, knowledge, memory etc. Thus, *sattva* is of the nature of pleasure in various forms.

124. ***Sattvāvajaya :*** The term *Sattvāvajaya* literally means to win over the mind. It comprises of psychotherapeutic measures in the treatment of psychiatric and psychosomatic diseases. It is best achieved by restraining the mind from desires of unwholesome objects and cultivation of *jñāna* (spiritual knowledge), *vijñāna* (skilled knowledge), *dhairya* (courage), *smṛti* (memory) and *samādhi* (trans). It is one of the three principal forms of therapy described in Āyurveda namely *yuktivyapāśraya, daivavyapāśraya* and *sattvāvajaya.*

125. ***Śītala :*** A general term used for cold, clam and alpine conditions or materials.

126. ***Sneha :*** The unctuous substances used for *snehana karma* are known as *sneha.* They may be of vegetable origin viz., oils of various types or may be of animal origin viz., *Ghee*; animal fat and bone marrow. Out of all these four types, Ghee is considered to be the best *sneha dravya* for *snehana.*

127. ***Snehana :*** *Snehana* means administration of unctuous substances in the body either externally or internally. It is used as a form of therapy in specific diseases as it is one of the six classical therapeutic procedures (*ṣaḍūpakramas*), which are employed in the management of different ailments besides being used as *pūrva karma* (preparatory procedure) during *Pañcakarma* therapy as it renders the body 'soft' and disintegrates the accumulated doṣas.

128. ***Snehapāna :*** Intake of *ghee* or oils or other fats for the process of lubricity, secretive action, softness and for the induction of moisture in the body. Used as *Pūrvakarma* in *Pañcakarma* Therapy.

129. ***Sneha-vicāraṇā :*** The administration of *sneha* (unctuous substances) mixed with food or other suitable substances of preparations is known as *vicāraṇā*.

130. ***Śodhana :*** Purifications of minerals, metals and poisonous herbal drugs (*viṣas* and *upaviṣas*) in order to remove the inherent impurities and poisionous effects is called *śodhana*. Different methods are described for purifying different medicinal substances.

Śodhana also refers to the act of cleansing, purifying or correcting the channels of the body by *Pañca Karma* Therapy.

131. ***Śoṣaṇa :*** The act of drying, parching or destroying.

132. ***Srotas :*** The term *srotas* refers to such structures or channels in the body which comprise of hollow space, which has openings and which carries certain materials from one part of the body to the other, Within this definition a *srotas* may be as minute and subtle as a single cell or may be as gross as the whole gastro-intestinal tract. There can be other medium *srotāṁsi* like arteries, veins, capillaries, lymphatics, nephrons, semeniferous tubules etc. The concept of *srotas* of Āyurveda is comparable to similar entities of membrane biology. It is essential to keep the *srotāṁsi* clean and patent inorder to allow normal flow of nutrients etc. and to sustain normal homoeostasis i.e. *dhātusāmya*. In case of morbidities of *srotas, saṁśodhana* therapy is employed.

133. ***Svabhāvabala pravṛtta :*** The diseases arising due to naturally occuring organic and functional changes in the body and mind under influence of time factor are known as *svabhāvabala-pravṛtta.* Senility, death, hunger, thirst, sleep etc. are common examples.

134. ***Svastha :*** *Svastha* or the healthy state of an individual is defined as a state of equilibrium of *doṣas, dhātus, malas* and *agnis*, alongwith happiness of *ātmā, indriya* and *manas.*

135. ***Swedana-karma :*** This is a form of therapy by which a person is made to perspire. If forms one of the important modes among *ṣaḍūpakramas* (six-fold therapeutics). It is also an essential preparatory procedure for *pañcakarma* therapy and is supposed to melt the waste products (*doṣas, malas* etc.) of metabolism held up in subtle channels of the body, after they have been disintegrated by *snehana karma.* There are thirteen types/methods of *swedana* described which are used according to the disease states. The *swedana* therapy essentially is of two categories : 1. *Sāgni sweda* which is induced by direct contact of fire/heat and 2. *Niragni sweda* which is induced without direct contact with fire/heat.

136. ***Tamo Guṇa :*** *Tamas* has two basic characteristics viz. *gurutva* or heaviness and *āvarṇaka* i.e. it has got the capacity of covering or concealing. Due to its *gurutva guṇa.* it suppresses and controls *rajas* and *sattva guṇas.* The third characteristic or the result of *tamoguṇa* is *viṣada,* which refers to ignorance *(ajñāna),* delusions *(moha* or *mithyā jñāna),* depression and similar properties. *Tamas* is associated with *jaḍatva* i.e. inertia an attribute opposite of the activity of *rajas.*

137. ***Tanmātrā*** (Tat + Mātm) **:** There are five *tanmātrās* namely *pṛthivī tanmātrā, ap tanmātrā, tejas tanmātrā, vāyu tanmātrā* and *ākāśa tanmātrā.* They are the most subtle elements and represent the subtlest and minutest undividable particles of matter. They exist in the form of quanta of different kinds of energy. They have inherent tendency to mix together in different proportions adopting a rule of physics called *pañcīkaraṇa* to form the stable *pañca mahābhūtas,* the five fundamental categories of matter. Originally in the course of creation the *tanmātrās* are formed by permutation and combination of the three fundamental attributes of *prakṛti* viz., *sattva, rajas* and *tamas.*

138. ***Triguṇas :*** The *triguṇas* viz. *sattva, rajas, tamas* are considered as the ultimate causal factors for the whole universe. *Prakṛti* (primordial matter) is composed of *triguṇas,* which are known as infinitesimal reals and thus, they are components of the pattern of primordial matter, the *prakṛti* or *avyakta* described by Suśruta. Āyurveda, thus recognizes the *triguṇātmaka* nature of the primordial matter and its evolutes, and the great role which is played by *triguṇas* in the living life *of a puruṣa. Triguṇas* are not the *guṇas* (properties) in real sense but they are susbtances and possess *parimāṇa* as quantum and *paricchinnatva* (extensivity). *Triguṇas* play dominating role in the process of formation of *manas,* therefore *triguṇa* concept is used more for rational explaination of all psychological phenomena.

139. ***Upadhātus :*** *Upadhātus* are byproducts of the seven principal *dhātus.* The important function of the *upadhātus* is to support the body. They support the various structures and organs of the body, but they do not undergo any specific transformations like *dhātus.* There are seven *upadhātus* evolving out of the main *dhātus* viz., *stanya* (breast milk) and *rajaḥ* (menstrual fluid) evolve out of the *rasa dhātu* (plasma, intercellular and extracellular fluids); *kaṇḍarās* (tendons) and *sirās* (blood vessels) evolve out of *rakta* (blood); *vasā* (adipose fat or tissue) and six layers of skin (*saḍ-tvak*) are evolved out of *'māṁsa'* and *'snāyu'* (nerves) is evolved out of *medas* and so on.

140. ***Uttara Basti :*** The administration of enema material through urethra of male or female and through the vagina of a female is known as *uttara Basti.* It is particularly useful in semen disorders in males and menstrual disorders in females.

141. ***Vājikaraṇa :*** *Vājikaraṇa* therapy aims to promote the virility and sexual stamina of an individual by confering the health, vitality, strength and longevity in order to fulfil the biological urge of perpetuating the lineage. It is one of the specialities practised in Āyurveda.

142. ***Vamana Karma :*** The elimination of various kinds of endogenous toxic substances through upper pathway by means of medication induced vomiting, is known is *Vamana karma.* It is a part of *pañcakarma* therapy which is given only when the patient has been properly prepared by administration of *snehana*

and *swedana*. *Vamana karma* is specially indicated for elimination of *kapha doṣa*.

143. ***Basti Karma :*** *'Basti'* is the administration of medications by enema to get desired therapeutic effect. It forms the most important component of *pañcakarma* therapy, and is supposed to be the best treatment of *vātika* diseases. It is called *'Basti'* because in ancient times enema used to be introduced with the help of *Basti yantra* made up of the urinary bladder *(Basti)* of animals. *Basti* therapy is classically of two types : (1) *Anuvāsana Basti* or oleus enema and ; (2) *Āsthāpana Basti* or decoction enema (non-oily).

144. ***Vāta :*** *Vāta* is the most important one of the three *śārīra doṣas*. *Vāta* is the biophysical force, which keeps the *kapha, pitta,* all the seven *dhātus* and *malas* in motion. The biological *vāta* is subtle, all pervasive, incorporeal and unstable, which is mainly responsible for normal functioning of all the vital structures and entire mental and bodily movements. It contributes energy, and is also responsible for inspiration and expiration.

145. ***Vaṭikā*** : *Vaṭikā* is the pill prepared by solidifying the decoctive of durgs with or wihtout mixing powders of other drugs.

146. ***Vibandha :*** Constipation / Obstruction with faecoliths etc.

147. ***Vidāhi :*** A substance which usually causes gastric irritation, leading to pyrosis and heart burn.

148. ***Vilayana :*** The act of liquification / destruction.

149. ***Vilekha :*** The act of scratching.

150. ***Vipāka :*** *Vipāka* is the action of the drug after it has undergone digestive and assimilative transformations. The *vipāka* of a drug overcomes the action of *'rasa'* (taste) but is itself overcome by *vīrya*. *Vipāka* refers to drug metabolism i.e. action of a drug through drug metabolism. The texts describe three kinds of drug metabolism viz., *kaṭu* (pungent), *amla* (sour), *madhura* (sweet) responsible in turn for increase in *vāta, pitta* and *kapha* respectively.

151. ***Virecana Karma :*** It is a systemic therapy for *pitta doṣa* in which the *doṣa* and *malas* (endogenous toxic

substances) are eliminated by purgation through lower G.I.T. It is one of the five *pañca karmas,* which is obviously meant to eliminate certain kinds of substances which cannot possibly be excreted through sweat glands, lungs, kidneys, stomach etc. instead they can be eliminated only through liver and/or the colon mucosa. Virecana Karma refers to a process of therapeutic purgation to liquify the excreta and expel them out of intestines.

153. ***Vīrya :*** *Vīrya* refers to the potency of a drug/drug action. Such an action is not accounted for the *rāsa, guṇa* or *vipāka* of a drug. According to the most commonly held view *vīrya* is of two kinds : *uṣṇa* (literal meaning : hot) and *śita* (literal meaning : cold).

154. ***Visrāvaṇa :*** The act of drainage.

155. ***Vṛṣya :*** These are the medications used in *vājikaraṇa* therapy. *Vṛṣya* means a remedy which promotes virility.

156. ***Vyādhi :*** *Vyādhi* means disease. In Āyurveda *vyadhi is* categorised as :

(i) ***Ādhyātmika :*** Diseases caused by intrinsic disturbances of the bodily and mental *doṣas.*

(ii) ***Ādibhautika :*** Diseases caused by environmental stresses (physical causes).

(iii) ***Ādidaivika :*** Diseases caused by providential causes. e.g. the acts of God etc. *Kālabala-pravṛtta, daivabala pravṛtta* and *svabhāvabala-pravṛtta* types of diseases are included under this group.

157. ***Vyādhi :*** The term *vyādhi* or disease is a state in which body and the mind, both are subjected to pain and misery. *Doṣavaiśamya* (imbalance of *doṣas*) is considered to be the sine-qua-non for causation of a disease.

158. ***Vyādhi-Saṅkara :*** Co-existance of many diseases in the same person at the same time is known as *vyādhi-Saṅkara.*

159. ***Vyadhana :*** The Process of puncturing.

160. ***Yogavāhi :*** A drug or a drug vehicle which has special affinity to carry and to potentiate the actions of the main drug to which it is additionally mixed. It helps and accelerates the

bioavailability of the original drug. The *yogavāhī* agents possess certain special biophysical properties viz. *vyavāyi, vikāsī, sara*, *cala* and *sūkṣma* etc.

161. ***Yukti Pramāṇa :*** The ancient Indian tradition describes three principal ways of knowing or testing viz. 1. *Pratyakṣa* (direct perception), 2. *Anumāna* (inference), 3. *Āptopadeśa* (verbal or textual testimony). These three are known as *Pramāṇa-traya* (the three parameters). Caraka describes the Fourth *pramāṇa* i.e. *the yukti pramāṇa* which refers to planned experimental evidence.

162. ***Yuktivyapāśraya Cikitsā :*** It is a form of *cikitsā* (therapy) in which objectively planned drugs, diets, exercises and other general modes of life and life styles are prescribed in order to achieve *doṣa-sāmya* i.e. biobalance. A large number of herbs, minerals and biological products are used singly or in compound form depending upon their pharmacodynamic properties like *rasa, guṇa, vīrya, vipāka* and *prabhāva,* and their pharmacological properties including their humour specific action based on the doctrine of *pañca mahābhūta* and *tridoṣa.*

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